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POSSIBILITIES AND LIMITATIONS OF INVESTORS' SERVICES

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PART I. SHORT-TERM TRADERS' SERVICES

THE purpose of the study on which this article is based was to explore the comparative usefulness of different kinds of investors' services, in the hope of finding an objective distinction between the more and the less promising types of service which might be of assistance to investors in selecting the best type of service for them, and might be helpful to the service enterprises themselves in making their facilities more useful to investors.

One portion of the study involved analysis of such distinctions as are to be found in economic literature, the most notable of which is that between factual and forecasting services. One of the extreme advocates of this distinction is Oskar Morgenstern, who does not deny the usefulness of factual services, but argues in detail that there is little hope of ever producing reliable forecasts in the field of economics, especially by services which make their predictions available to the public.[2] This possible distinction is

[1] This article is based on Mr. Kerchner's Doctor's dissertation.

[2] Oskar Morgenstern, *Wirtschaftsprognose* (Wien: Julius Springer, 1928). Cf. Benjamin Graham and David L. Dodd, *Security Analysis* (New York: McGraw-

disposed of in an unpublished portion of the study by demonstrating that the difference between factual service material and forecasting material is a difference of form only. A service may express substantially the same information either as a forecast or as a statement of fact from which the investor is expected to deduce his own forecast. Since all investment depends upon the future for the expected profit, the only service material which can possibly be of use to investors is that which sheds light, either directly or indirectly, upon the prospects for such profit.

After testing all distinctions which have been found in published literature, or have been suggested by investors or by service enterprises themselves, one is submitted here as more tenable and more useful than any other which has been found. Services are divided into two classes, called "short-term" and "long-term" operators' services, according to the objectives of the clients whom they attempt to serve. To avoid confusion readers must note with care the precise distinction between these two types of investment objectives.

All market operators are classified as short-term or turn-in-the-market operators who stake their money upon the next ensuing movement of the market of any particular magnitude or duration; those are classified as long-term or intrinsic-value operators who disregard (or reduce to minor consideration) the next ensuing market movement. The latter group includes many conservative investors who disregard all market movements as a source of profit, relying entirely upon dividend and interest return, but it also includes those avowed speculators who hope for large market profits upon securities or commodities purchased when the price is considered "cheap" if, when the purchase is made, they are prepared to follow their convictions and hold their positions even though the first market movement is adverse. On the other hand, the trader who buys only when he expects the first market movement to be upward and is either not able or not willing to disregard an unexpected decline will be considered a short-term operator even though he may have formed an estimate of the

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Hill Book Co., Inc., 1934). Contrast William Wallace, *Business Forecasting and Its Practical Application* (3d ed.; London: Sir Isaac Pitman & Sons, Ltd., 1932).

probable earning power of the security and this estimate may have influenced his forecast of the market.

The philosophy underlying the methods of the two groups is inconsistent. This is seen if the market declines after a purchase is made. The true long-term operator who has relied upon his judgment concerning the earning power of the security or its prospects for appreciation over a long period of time, irrespective of intermediate fluctuations, will not be disturbed by an unexpected decline in the market. If he does anything about it he will purchase an additional commitment, on the theory that if the stock was cheap before it is now cheaper. On the other hand, the short-term trader has reason to be disturbed because the decline in the market indicates that he was wrong in his judgment. Many of these traders follow the policy of "protecting" each purchase with a stop-loss order at some particular distance under the purchase price, on the theory that it is better to take a small loss than to risk the prospects of a large one. It is illogical for them to average down costs with additional commitments, just as it would be illogical for the long-term investor to sell merely because the market declined unexpectedly.

In its broad scientific aspect this distinction is one between those investors, on the one hand, who operate as if they knew a particular future fact, such as whether the next important movement of the market will be upward or downward, and, on the other, those who operate as if they rely only upon what they consider known qualities or tendencies and avoid placing themselves in such position as to lose if unforeseen forces or circumstances interrupt those tendencies from time to time causing temporary fluctuations. The known qualities on which some of the latter rely include earning power of investments; the concept which many of them call intrinsic value, which is a capitalization of estimated earning power; and various others. The tendencies include business tendencies as well as market tendencies. Apt examples are those tendencies of prices or other business conditions to adjust themselves toward a state of equilibrium, such as is discussed by Alfred Marshall and other economists. Such tendencies may be expressed in terms of general forecasts but they do not

justify specific forecasts of the turning-point of the market or of the direction of the next movement or of any other specific fact at a particular time.

Therefore, the writer takes issue with Morgenstern, not so much in what he says about the futility of specific forecasting, as with his assumption that specific forecasts are the only types of prediction which may be useful. One might better say that although scientific methods may be applied to determine the enduring qualities of things and their tendencies to perform in certain ways, the scientific attitude requires that one recognize the possibility that particular future events may be influenced by unforeseeable forces or circumstances. Hence scientific principles demand that one employ methods of operation in business or investment or elsewhere founded upon that which is known concerning the future, much or little as it may be, and that he protect himself, as best he can, against that which is unknown. The long-term operator often assumes this scientific attitude, trying to rely upon enduring qualities and known tendencies and attempting to protect himself against the unknown, whereas the typical short-term trader stakes his money upon a more specific future event as if he knew that it would occur before some other event.

In this article the attempt is made to demonstrate the principal limitations which necessarily apply to all short-term traders' services. It will be seen that these limitations apply to factual services with almost as great force as to forecasting services.

In the sequel to this article which will appear in the next issue of this *Journal* the longer-term services will be discussed. It will be seen that they are free from most of these limitations which beset short-term services. Within the class of long-term services there seems to be almost unlimited possibilities of useful service to investors and to society, not only by supplying facts, but by issuing forecasts and advice as well.

SHORT-TERM TRADERS' SERVICES DEFINED

Most of the large statistical organizations issue certain statements of facts, forecasts, and advice which may be used by both long- and short-term operators and issue other material which is

designed especially for the one or the other group. In the present article consideration is given only to such subject matter as is directed toward and accepted exclusively by the short-term traders. This includes forecasts of the near term course of the market or the turning-points of the market, but excludes forecasts of the longer term extending through periods long enough that the short-term traders should be expected to change their positions (buy or sell) within them. It includes facts and advice to be used by the trader in such forecasting for himself; thus it includes technical information concerning the market but excludes facts and advice pertaining to the intrinsic value of securities and pertaining to long-term tendencies.

Among the services which fall almost exclusively within this class are a number of forecasting services of the market letter or bulletin type. Since all the fraudulent and tipster services almost invariably appeal to the get-rich-quick instincts of the public, they must fall within this class, but so also do many others whose good faith is not questioned.

CHANCES OF PROFIT TO TRADING PUBLIC

In order to understand the functions of short-term traders' services one must first recognize that the potential profit of the average short-term trader is less than that which is commensurate with the risks involved. There are three reasons for this:

First, trading is a competitive game; it produces no new wealth. Although some traders may gain a profit, someone else must sustain a loss to offset each gain. The greater the profit of the successful traders, the greater must be the loss of others.

Second, trading consumes a substantial amount in brokerage fees and related expenses. Although these fees may seem small in proportion to the maximum possibilities of profit, they create a constant drain upon the total trading-fund and thus reduce the profit of the average trader.

Third, the short-term trading public labors under a technical handicap as compared with the long-term investing public. In order for the former group to gain a profit from the latter they must induce the latter to buy when traders wish to sell and sell when they wish to buy. This is not easy. Even assuming that

long-term investors may be induced to buy certain securities after a sharp rise in price, it is inconsistent with their philosophy to part with those holdings at lower levels unless they are convinced by evidence other than the performance of the market itself that the holdings have lost their "value" as determined by earning-power. Assuming other things to be unchanged, there will always be a larger number of long-term investors willing to own a security at forty than at fifty, and a still larger number willing to own it at thirty, etc.

The theory of many short-term traders is that they can detect accumulation and distribution on the part of long-term investors; and that such periods of accumulation mark proper periods in which to buy, whereas such times of distribution are proper times to sell. This theory assumes that long-term investors are accumulating stock during the lower portion of each major price cycle and are selling it during the periods of overspeculation. If traders are correct in this theory, then the only possible conclusion is that the average of the long-term operators is making money from short-term traders rather than vice versa.

Therefore, the problem of all enterprises attempting to serve short-term traders resolves itself into that of giving their clients enough better chances of profit than those of the average trader to overcome this tendency toward losses.

One must recognize also that the total funds of the short-term trading fraternity would soon be exhausted if they were not replenished from time to time from outside sources. There is, however, an irregular flow of new funds to the market from other sources such as the profits of industry and savings of small investors. This influx of new funds is, of course, irregular, but it constitutes an important market factor and one which tends to obscure some of the tendencies discussed below which would otherwise be easily seen.

DECLINING TENDENCY OF PROFIT TO AVERAGE CLIENT

Success on the part of any particular service enterprise tends to defeat itself. Either actual or apparent profits derived by the clientele of a successful service tend to attract other clients. As

the clientele grows in size and in ratio to nonsubscribers from whom profits are extracted, the potential profit of the average client is reduced. If one assumed that the entire trading public might join the clientele of the most successful service enterprise, the profit of the average client would be reduced to a level at which it would clearly be less than commensurate with the risks involved. Over a period of time losses would exceed profits by an amount equal to trading-expenses plus such gains as were made by long-term operators.

A similar result is produced in other ways without actual increase in the number of clients of the most successful service. All profits obtained by its clientele must be drawn from the funds of less successful operators. This flow of funds from the exploited group to the more successful group reduces the profit possibilities of the average client in terms of percentage of funds employed. Furthermore, unsuccessful traders are constantly being discouraged and driven out of the ranks of the short-term trading-group. Some of them join the ranks of the long-term investors, whereas others leave the market entirely.

This tendency for successful services to defeat themselves would be clearly seen by the public if it were not obscured by constantly changing circumstances. The influx of new funds to the market from time to time creates a source of new profits for the most successful traders. Also profits arise from anticipation of changes in earning-power and intrinsic values of securities. Since these sources of profit are not created by the short-term traders' services, however, they may be disregarded here. In the sequel to this article, however, it will be seen that the anticipation of changes of intrinsic values of securities, as determined by earning-power, is one of the principal functions of the longer term type of service.

ILLUSTRATION OF THIS TENDENCY

In order to illustrate this tendency let us assume that one forecasting service in this class became "perfect" in the function which it has undertaken. It has become able to "call" each turning-point in the market at the proper time for traders to change

their position upon it. It is assumed, however, that this service does not attempt to forecast the trend of the market farther into the future than is necessary in order for clients to buy or sell upon each turn in the market as it occurs. Neither does this service attempt to determine intrinsic values or to advise clients to refrain from trading upon such turns of the market as are away from intrinsic values. For the time being we will also exclude by assumption the possibility of the action by the clients of this "perfect" service influencing other traders or long-term operators to buy or sell, but it is assumed that the clientele itself buys when the service predicts a rise and sells when it predicts a decline.

Under these assumptions it seems clear that a successful forecast would produce greater profits for a single client who might have exclusive use of it that it would produce for the average of two clients or hundreds or thousands of clients. The one exclusive client would be able to use the "perfect" forecast as a guide to buying stock at the cheapest possible eighths and to selling it at the highest possible eighths on each turn. If there were two or more clients there might be less stock offered at the cheapest eighths than they would wish to buy. The larger the clientele acting on these "perfect" forecasts, the higher the price which would be paid by the average client when they bought and the lower the price which would be realized by the average client when they sold.

Hence, assuming the greatest conceivable degree of skill in this type of forecasting, and assuming no interference from outside forces, one must see that the potential profits of the average client tend to decline with every increase in clientele, however small. If it is any consolation to this class of services, one may point out that under these assumptions the clientele of a service might become very large indeed before all possibilities of profit to the average client would be destroyed, but these two important assumptions are, of course, never true to fact. No service can hope for such "perfection" and it is futile to hope that other forces will not interfere with some of the potential profits. The important principle, however, cannot be avoided, that, *under even the most favorable assumptions of "perfection" of forecasting and no interfer-*

ence from outside forces, the potential profit to the average client of short-term traders' services tends to decline with every increase in clientele until profits are replaced by losses.

CHANCES OF BEING RIGHT

Services very seldom advertise the profit derived by their average clients. They usually rely upon claims that they have been right a majority of the time or that their forecasts presented profit possibilities (for a single client) of some specified amount. Also, statistical studies of the success of such forecasting services have usually been confined to testing their records against the performance of the market to see if the market moved in the direction of the forecast. Such claims on the part of the services and such statistical tests of their success are fallacious for two reasons. First, they often seem to embrace the assumption that there is no limit to the possibilities of correct forecasting on the part of the services, under 100 per cent perfection. In reality the group of short-term forecasters, under present market conditions, cannot possibly attain a record approaching such perfection. Although any one service might, conceivably, attain a record near "perfect" for a limited period, if judged only by the subsequent performance of the market, the group as a whole is not likely to attain a record much over 50 per cent correct for any protracted period of time, and there is greater likelihood of its being under 50 per cent correct than over.

Excluding from consideration, for the moment, purchases and sales by long-term investors and forced sales and purchases by short-term traders who have insufficient margins, most other transactions by short-term traders are made in reliance upon short-term forecasts of rise or fall. In order for a sale to occur between two short-term traders, the one usually must expect the market to rise and the other must expect it to decline. If the short-term trading-group constituted the entire market, there would always be as many forecasts erroneous as correct. In fact there would be more wrong than right if both the buyer and the seller were scored as wrong when the market failed to move in either direction. In other words, if all forecasts of rise and of fall

in the price of a stock were weighted by the amount of money with which they are backed up in the market, the average record of the short-term forecasters would be exactly 50 per cent correct unless both buyer and seller were scored as wrong because the market failed to move, and in that case the average record would be less than 50 per cent correct.

To give consideration to the sales and purchases of long-term operators, which were ignored above, does not materially improve the prospects for the short-term forecasters. In fact, it seems to make their prospects even poorer than 50 per cent because we have seen that over a protracted period of time the long-term group seems to have a moderate advantage over their short-term competitors.

In any event, the effect of the purchases and sales of long-term operators would not greatly change the probable percentage of error of the average short-term forecaster as long as the short-term fraternity is substantial in size and in proportion to the long-term group, because the slower turnover of stocks by the long-term holders always tends to spread their purchases and sales so that they have only minor effect at any time. If the average period of retention by long-term investors is ten times as great as the average period of retention by short-term traders, the latter group might account for the major portion of the trading even though the longer-term investors held much over half of all active stock issues. That being true, the net effect of all operations by the long-term group probably does not greatly change the prospects for short-term forecasters, but what effect it does have is probably to reduce the prospects for accuracy of short-term forecasts rather than to increase them.

So, also, with forced sales and purchases among inadequately margined accounts. Their net effect, in normal times, is not enough to alter greatly the prospects of success to the average short-term trader.

One may, of course, argue that the forecasts of the services might be more than 50 per cent correct if those of nonsubscribers fell substantially below that level. True, such a situation might exist for a limited period of time, but if the services advertise their records and do not try to limit their clienteles they will soon

attract the unsuccessful nonsubscribers or drive them out of the market.

The same principle applies to each service individually. If any service in this class gains an enviable record for a period of time it is likely to loose it rather quickly when it advertises it. This will become more clear to readers after the discussion of repercussions below.

PSEUDO-FORECASTING

There is another reason, and a very important one, why investors must be skeptical of a service which points with pride to its "perfection" in short-term forecasting and cites instances in which the market rose after it predicted a rise and fell after it predicted a decline. Such a rise or fall of the market may not indicate one iota of forecasting ability on the part of the service. And it may not indicate one cent of profit to its average client. If all other factors were merely neutral, such a rise and fall of the market would be the natural consequence of the forecasts if they are acted upon by a substantial clientele.

Assume that all other factors are neutral—that in the absence of the forecast by the service the price of a given stock would have remained unchanged—under these circumstances the service forecasts a rise in the price of that stock. In so far as it influences its clients to buy, the direct effect of their purchase orders is to advance the price of the stock. When the clientele of the service has bought and the price is up, the service may predict a decline. Again, the sales by the clients themselves tend to depress the price.

If no one outside the clientele of the service had been influenced by the market flurry the price would come to rest at approximately the same level at which it started. Under these assumptions the result would be a net loss to the average client of an amount sufficient to cover brokerage fees and other direct costs of trading including the difference between bid and asked prices. The brokers would have profited and some few of the clients might have profited at the expense of others but the result to the average client would have been a net loss. Nevertheless the record of the service would look "perfect."

The direct effect of the buying and selling by the clients of a

service, if they follow its predictions, is to cause the market to move in the direction of the forecast, but this direct effect tends to bring them loss instead of profit. Unless some other source of profit can be found, the clients of a service may always suffer losses even though its forecasting record looks perfect.

This seems to be one of the most difficult points for the public to understand—but its very simplicity should enable everyone to see it. Investors sometimes accuse a service of "fraud" because it advertises a high degree of "perfection" of forecasting, whereas investors who have tried to follow its forecasts have sustained losses. A certain enterprise which advertises widely and must have a large clientele has received much adverse criticism of this character. Its advertising literature, which was examined by the writer, claims merely that it successfully called the turns for a period of time. The service does not state that its clients made money and, obviously, it could not determine that fact because it does not expect its clients to report all their purchases and sales. Clients of that service report losses and claim that they prove its advertising to be fraudulent. To the present writer the facts reported by the investors seem equally consistent with the probability that the clients of the service are numerous and are gullible and have been buying in substantial amounts when the service predicted a rise and selling when it predicted a decline.

Until every investor recognizes these truths, let us repeat that *in so far as the clients of any service buy when it predicts a rise, they tend to advance the market, and in so far as they sell when it predicts a decline, they tend to produce that decline. Such buying and selling* (other forces being neutral) *produce only losses and no profits for the average client, although the service may gain, thereby, a record which is apparently perfect.*

In order for forecasting of the short-term variety to produce profits to the clientele of a service the forecast of a rise in the market must be followed by a rise after the clients have bought. This rise must be sufficiently large and vigorously supported by nonsubscribers to enable the clientele to sell later at a profit. Conversely, a forecast of a decline must be followed by a decline far beyond that which is produced by the selling of stock by the clientele itself. In order for such a decline to be utilized for a

"bear" operation (a short sale and cover transaction), the market must continue down after the sales by all clients of the service have been executed and must remain down while they cover their short positions.

Whenever a service advertises that the market rose a certain number of points, perhaps ten points or fifty points, after it predicted a rise, one may be certain that some part of that rise, possibly all of it, was pseudo-forecasting, or the effect produced by purchases by the clientele itself. Part of the rise was, probably, the manipulative effect produced by the sympathetic purchases by nonsubscribers. A part may, perhaps, be the rise which would have occurred if the forecast had never been released, but it is equally possible that the market might have moved in the opposite direction had the forecast not been released.

Therefore, the fact that the market did rise ten points or more after the prediction was published does not prove the service possesses forecasting ability. Neither does it prove that its clients profited. If they bought in response to its prediction they produced part of that rise, perhaps all of it. If the part which was produced by the clientele was substantial in proportion to the total rise, it is likely that those clients who bought would not be able to sell without depressing the market to a level at which they would not obtain a net profit.

If the rise which materialized was only ten points, the one certain conclusion which can be drawn from that fact is that no client profited by an amount greater than ten points less expenses of trading. The result to the average client must have been poorer than that potential profit to a single client. If the clientele were large it is probable that the result to the average client would be unsatisfactory and might even be a net loss.

Therefore, mere comparison of the forecast with the performance of the market is always overfavorable to short-term forecasting services. Such tests give the forecaster credit for the element of pseudo-forecasting which represents neither forecasting ability on the part of the service nor profits to its clients.[3]

[3] Cf. Alfred Cowles, III, "Can Stock Market Forecasters Forecast?" *Econometrica*, I (1933), 309–24.

MANIPULATIVE TENDENCIES

Above, the fact has been emphasized that each market movement is the effect of sales and purchases. Now we turn to its influence upon the public. Each market movement tends also to cause further purchases and sales. Manipulative tendencies are the natural manifestation of the human instinct to follow the crowd.

When the clients of any service buy a stock (or any number of stocks) they tend to advance the market; this advance tends to attract the attention of other members of the trading public, some of whom will be likely to join the buying wave and thus raise the market still farther. The larger the clientele of the service, the greater is likely to be the rise in the market when its clients purchase stock and, therefore, the more noticeable that rise will be to other members of the trading public, but, also, the greater the public following which must be attracted before the average client of the service will be enabled to sell his holdings at a profit without depressing the market.

Every service enterprise which influences clients to buy or sell securities or commodities has more or less manipulative influence upon the public, whether it intends such an influence or not. Counselor services, however, have an opportunity to minimize this effect by varying their advice to different clients, and many of them do so, particularly because they are interested in long-term objectives rather than in producing market flurries. Printed services, however, and all other bulletin services of the form-letter type have less opportunity to avoid this effect of their predictions or advice. Although it is assumed that no reputable enterprise predicts a market movement for the purpose of influencing the market, investors must recognize the possibility that enterprises of questionable integrity might do so. On the other hand, it would seem likely that most deliberate manipulators would use the pool type of organization rather than the service type because the former offers several distinct advantages, such as secrecy and control over trading technique, which are not offered by the service form of organization.

The analogy of the children's game of crack-the-whip may help readers to visualize the place of the clientele of a traders' service

in a trading cycle. A trading cycle may be defined as any movement of sufficient size that traders would be expected to use it as the basis of a complete operation, either purchase and sale or short sale and repurchase. In the interest of simplicity it will be described here as if it started with the upward movement. The question is whether the clientele of a traders' service is likely to gain a position near the base of such a movement, the position which is analogous to that at the butt of the whip in the game.

Unless the service is deliberately trying to manipulate the market, it is likely that it will not predict a rise in the market until evidence is seen that the rise is already under way. When that has taken place it is too late to gain the preferable position at the base of the movement, at the butt of the whip. Clients of such a service will join the movement after it has been started by manipulators or by long-term investors. In either case they obtain a distinctly inferior position. But the manipulative effect of their purchases may attract other members of the public to join the movement after themselves. Their prospects of success depend directly upon the relative number of such trailers who follow them in the movement. If a large public following is attracted, the movement may be carried far enough that the clients whom we are considering may be able to sell at a satisfactory profit to others who are still eager to buy. But in the market cycle, just as in the children's game, those strong interests which start the movement and gain the ideal position in it have the advantage in selling and thus terminating it. The technique is for them to start selling while the manipulated members of the public are still buying and are willing to take their stocks off their hands at favorable prices. The last to join the movement suffer most but the effect is usually carried back more than halfway. Only those at the very base of the movement gain a profit approaching the maximum possible profit which has been mentioned above.

Who starts such a trading cycle and thus gains the favorable position in the movement? Several answers to this question might be offered. In the presumably rare instance in which a service enterprise attempts to manipulate the market, it may start the movement and its clients may thus gain a position near the base, but in all other instances in which a trading cycle is started by in-

creased demand on the part of long-term investors, by nonsubscribing members of the trading public, or by pools or other professional manipulators (assuming the existence of such a group)—in all these instances the preferable position in the trading cycle will be gained by those who start the buying movement, and the clients of all traders' services will join it in an inferior position if they join it at all. They will be among the manipulated rather than the manipulators.

REPERCUSSIONS

Just as there is a natural human instinct to follow the crowd, so also in every organized market may be seen evidence of a competitive urge to try to beat the crowd. This urge or impulse gives rise to market phenomena which, for the lack of a more appropriate name, may be called repercussions.

In any large clientele there are always a number of individuals who will try to gain an advantage over other clients by using the service material in some manner other than that which is expected. For instance, after a service has committed several errors some of its clients may begin to think that the service is more often wrong than right. Hence, they may undertake to sell when it predicts a rise and buy when it predicts a decline. A variation of this idea takes the form of the theory that the market is likely to rise a moderate distance as a result of the purchases by the clients themselves and at some later time when they attempt to sell it will be likely to decline. Acting upon such a theory a trader sometimes places his order for a short sale some certain distance above the market when the service predicts a rise. If the predicted rise develops he may benefit by the short sale near its peak and the subsequent decline but if the service is wrong and the market does not advance the distance expected he will have lost nothing. Almost an endless variety of other ways have been found by clients to trade so as to try to gain a profit from other clients of the same service or to gain an advantage over them in seeking profits from the same source.

Furthermore, many pool operators and other professional traders read the principal short-term traders' services, not for the purpose of following their predictions or advice, but for the sole

purpose of making as much as possible out of the clients of those services in every way possible. It is not uncommon for powerful trading interests to be planning a certain operation, then, if a leading service learns of it and announces the coming movement to their clients, the interests which had planned it are likely to change their plans suddenly for the purpose of defeating the clientele of the service and enhancing their own profits. For instance, if the interests had started accumulating certain issues when one or more leading traders' services predicted a rise in the market for those issues, the pool manager might dump stock on the market to cause a temporary decline, or he might snap up all available stock and shoot the market up rapidly, or he might try any of a number of other strategies.

The point is that either clients or others who learn of the announcements of such services often defeat the faithful followers of the service. Such activities may produce market movements consistent with the prediction of the service and even more spectacular, or they may in extreme cases produce movements in the opposite direction. If a rise has been predicted it may be cut short by orders for short sales soon after the clients of the service have completed their purchases, it may shoot up so rapidly that the average client will obtain his stock at an unfavorable price if he attempts to buy, or it may even decline. In direct contrast to the manipulative tendencies, however, all the repercussions are likely to injure the faithful clientele of the traders' service.

CONFLICTING TENDENCIES

It has been seen that the direct effect of the attempt on the part of clients to buy when a short-term traders' service predicts a rise and to sell when it predicts a decline is to influence the market in the direction of the forecast although this response of the market to the orders of the clientele itself does not bring profit to the average client—furthermore, the indirect effect of this market movement upon the balance of the trading public is to generate two kinds of tendencies: manipulative tendencies which augment the movement of the market in the direction of the forecast and help the prospects of the average client, and repercussions which sometimes cause the market to move in the opposite direc-

tion from that of the forecast and always detract from the prospects of profit for the clients. Whether the favorable or unfavorable tendencies will be likely to prevail in any particular instance will depend upon the psychological setting in which the forecast is issued. Of course, the forecasting service attempts to determine what the psychology of the market is before it issues its forecasts, hence one of the major problems of this type of forecasters is to anticipate or "guess" how the professional and nonprofessional trading public will react to the announcements of all traders' services as well as to other news.

But, however well a service may anticipate the public reaction to the conflicting stimuli, it cannot prevent the conflict of tendencies. The conflict itself between favorable and unfavorable tendencies which are set in motion by each announcement of a short-term traders' service has two important effects for investors.

First, it lowers the actual profit of the average client of any traders' service a substantial distance below the maximum possible profit which has been discussed above. We have seen that there is a declining tendency of this maximum as the clientele of the service increases, and now we see that these conflicting market tendencies, which are always set in motion, lower the actual profit of the average client substantially below this theoretical maximum. When the clientele of a service is of such size that the theoretical maximum profit of its average client is quite substantial, these conflicting tendencies may cause the average client to receive an actual loss on each transaction—even under the assumption that the market moves in the direction of the forecast in each instance.

The second important consequence of this conflict of tendencies is to create or augment a situation of market instability and fluctuation. Forecasts of the near term course of the market do not tend to create a state of equilibrium around some particular level. On the contrary they are incessantly setting it in motion.

No matter how high prices may be, they may be pushed still higher by turn-in-the-market traders because the forecasts on which they rely are "bullish" predictions. Much of the buying before the crash in 1929 was undoubtedly performed by traders who were

purchasing in anticipation of further rise in the market rather than in reliance upon estimates of intrinsic value. Although no one can determine exactly how high the market would have risen in the twenties if it had not been for the stimulating influence of short-term traders, it is safe to say that it would never have reached the heights which were witnessed in 1929.

Stop-loss orders entered by such traders to protect long positions and also sales in anticipation of a decline may tend to accelerate a decline after a downward turn has occurred. Such sales in anticipation of further decline carry certain stocks, if not the entire market, down to much lower levels than they would find if no one sold except those who believed that prices were above the level of intrinsic value. There is no doubt of the existence of practical limits for the market as a whole, such as those set by the supply of credit, but the world has witnessed a recent boom and depression in which the upper and lower extremes were very far apart and were certainly farther apart than they would have been without the influence of short-term trading and of services designed for such traders.

ADVISORY SERVICES

The difference between the forecasting form of service and the advisory form cannot increase the maximum possibility of profit to the average client or prevent the operation of the tendency for the potential profit to decline as the clientele increases. But many advisory services limit their clienteles to comparatively small numbers so that the theoretical limit upon the possible profit is very high. However, leaks of information may sometimes occur. When they do occur so that "pools" and other professional traders gain the information which is intended for the exclusive use of the clientele, the beneficial effect of the limitation is entirely lost.

Another possible advantage of the advisory form of service over the forecasting form is that the scope of advice may be broader than that of forecast. For instance, the advice may extend beyond simple purchase or sale recommendations and may include recommendations concerning methods of safeguarding one's self against losses. Errors of trading technique sometimes cause losses

to clients of forecasting services which can be avoided, in part at least, by counselor services. Such losses avoided tend to cause the actual profit received by the average client to approach more closely the theoretical maximum.

A third advantage of the counselor type of service is that most enterprises of this class ask their clients to report purchases and sales to the counselor. This enables the latter to determine the actual profit of his clientele on each transaction. The service can thus estimate the amount of pseudo-forecasting, manipulative tendencies, and repercussions which follow each of its recommendations. Counselors may thus be able to profit by their own past experience to a greater extent than the forecaster for a bulletin type of service who can never distinguish between the market effect produced by his own clients and that which would have occurred if the forecast had not been issued, and can only estimate the probable profit or loss of the average member of his clientele.

A warning is, however, necessary. If short-term traders rush to investment counselors, demanding advice on short-term operations until the great majority of the trading public becomes clients of small counselor organizations, such counselors will tend to lose whatever advantage they now have. May it be repeated that the chances of profit to the average trader are less than commensurate with the risks involved, and this will remain true even though that average trader may some day become a client of an advisory service.

FACTUAL SERVICES

Factual services are also subject to the declining tendency of the maximum possibilities of profit to the average client as the clientele increases. Since factual services are now much more popular than forecasting or advisory forms of service, it follows that the profit of the average client of all factual services combined is probably very small if it is not a minus quantity under present trading conditions.

Unlike counselor services, factual services seem to present no special possibilities of profit to clients which may not be presented in the forecasting form. Contrary to the inferences of Morgenstern and others who have criticized forecasting, it seems that the limitations which are demonstrated above apply with almost

equal potency to factual material as to forecasting material if the investment objective which is being served is of the short-term or turn-in-the-market type.

If certain facts are useful to traders because they imply or indicate the ensuing course of the market, they would seem to have no greater possibilities of usefulness to the trading public than the best forecast which might be inferred from them, but it has been explained that even "perfect" forecasts of the next ensuing movement of the market of any particular size which may be assumed become of no avail when too many people try to exploit them. The tendencies described above as pseudo-forecasting, manipulative tendencies, and repercussions apply to factual services in exactly the same manner that they do to forecasts which are expressed by the service. The source of these tendencies lies in short-term trading rather than in expressed forecasts.

The circumstance which makes these truths difficult for the public to recognize is the fact that the trading public using such factual material is so large that some members of the group make very large profits from time to time. The inference is drawn that the profit derived is entirely dependent upon the skill of the trader. Of course the relative skill of various traders is a very important factor in determining their relative profits. The greater the number of "suckers" or unskilful traders there may be in the market at a given time, the greater may be the possibilities of profit to the most skilful traders who have access to the greatest amount of valuable information. But, as was demonstrated above with forecasts, the profit possibilities which arise from access to the most valuable factual information are limited by the same declining tendency when the number of persons using that information increases. Moreover, the profit to the most skilful users of factual information is enhanced by the manipulative tendency which their operations foster among the less skilful public and it is impaired by repercussions which are constantly being set in motion. No conceivable amount of increase of skill on the part of the trading public can ever overcome the principle that the potential profit to the average member of that body is less than commensurate with the risks involved.

Occasionally a trader or small group of traders discover a new

source of valuable facts, a new application of formerly used facts, or a new trading technique which may seem for a time to give promise of consistent profits. Loose thinking may lead them to believe that the new material is a bonanza which will make a gold mine out of the stock market. As the number of traders using the new facts or material begins to increase, the direct effect of their trading upon the market will also increase and the tendency of other traders to follow the crowd may work decidedly to the advantage of all users of the new facts or method, For a time they may gain a favorable position in each trading cycle. Accompanying the early stages of the increase in number of persons using the new material there may be such an increase in profits to all of them that they may jump to the conclusion that, since a small increase in number of users of the material has resulted in an increase in percentage of profit on all funds employed, a large increase in number of users of the material should result in a still larger increase in relative profits. But no such argument is tenable. The small increase in profits may arise from the working of the manipulative tendency, but as the profit to the users of the material approaches the maximum possible profit (as determined by the ratio of funds employed by the users of the material to those of nonusers) the tendencies described above as repercussions become more and more noticeable. Profits are eventually replaced by losses, and then the users resume their search for new material, new forecasting methods from old material, or a new formula for profits.

An enormous number of short-term trading methods has been developed from time to time. The methods described by Rhea form examples.[4] The discoverer or inventor of such methods often "check them backward" against past market performance for a number of years to try to determine how they would have worked in prior years. Under a misapprehension of scientific methodology, they believe that they are thus proving the "scientific" value of their new methods or formulas. Perhaps they are also tried out with a very small amount of money as a "laboratory test" of their value. They they are published in book form or in the pages of financial periodicals or in the bulletins of trad-

[4] Robert Rhea, *The Dow Theory* (New York: Barron's, 1932).

ers' services. If the objective of the method is within the short-term class of objectives, the result always has been and always must be disappointing to the public. Such methods defeat themselves when employed by large numbers of traders.

RECAPITULATION

Trading on the turn of the market never can be a source of profit to the public. It may be a source of profit to a few who have some advantage over the less fortunate members of the trading group in the form of inside information, unusual skill, or the like, but the essence of that advantage must be kept secret from the public or it will be lost. The idea of a service is to make some knowledge or other advantage available to the many. Therefore, whenever services try to make available to the many forecasts, facts, or advice concerning the turning-point of the market or the ensuing market movement of some particular size or duration, they tend to defeat that advantage itself. Over a period of time each enterprise of this character must fail to produce profits for its clients. The only traders' "service" (if it may be called a service) which can benefit its clients consistently over a protracted period of time must be the one which hides its light under a bushel by offering its fallacies to only a very few individuals who are able to prevent leaks of information to outsiders.

In contrast to the views of Morgenstern, it seems clear that factual services are equally as futile as forecasting services. If the objective is within the short-term class, the objective is futile for the public. Hence any form of service which is designed to facilitate that objective is also futile. The position of Graham and Dodd seems to be similar to that of Morgenstern to the effect that all economic forecasting is unscientific. Their arguments, however, are more applicable to all short-term traders' service material than they are to all stock-market forecasting, against which they are directed. The sequel to this article, which will appear in the next issue of this *Journal*, demonstrates that these arguments which seem so conclusive when applied against the short-term objectives lose most of their potency when applied to longer-term objectives.

[*To be continued*]

A REVIEW OF MONEY RATES IN CHICAGO

DON M. DAILEY[1]

I. THE MATURITY OF CHICAGO AS A BANKING CENTER

WHILE money rates themselves are one of the best indices as to the stature attained by a given banking center, yet it is important to observe by other means something as to the maturity of the center so that a background, in part at least, may be erected against which rates may be measured. There is a constant interaction of rates, on the one hand, and all the other factors of a money market, on the other. Now one is cause, again, effect; each is a measure in turn of the other.

Chicago as a banking center is primarily conditioned by the fact that it is a superior market place. This superiority as a middle western market had been clearly determined as early as the 1860's. Strategic location by which Chicago could take advantage of improved means of transportation made it possible for it to overcome the lead of New Orleans and St. Louis.[2] But to develop an advanced state of independence of eastern financial cities within a period of seventy years required a struggle in addition to natural advantages.

This concerted effort to build up more of a self-sustaining money market for Chicago is to be observed especially in two fields: bankers' balances and investment banking. As early as 1865 both the fact that Chicago bankers had acquired the accounts of numerous country banks because of direct trade connections and the fact that the National Bank Act of 1863 had named Chicago as a Reserve city paved the way for aggressive action on the part of the local bankers themselves. Now and then this action went

[1] University of Chicago.

[2] St. Louis was the keenest competitor of Chicago for the commercial supremacy of the Mississippi Valley. "It was not until 1880 that Chicago surpassed her rival as a center of population" (R. D. McKenzie, *The Metropolitan Community* [New York, 1933], p. 134). See also N. S. B. Gras, *An Introduction to Economic History* (New York, 1922), pp. 266 ff.

on under conspicuous leadership, such as that of W. F. Coolbaugh in the 1860's and 70's and of George M. Reynolds more than a generation later. In 1887 Chicago became a Central Reserve city, which made her banks eligible, like those of New York, to hold a portion of the legal reserves of banks in all other Reserve cities. This is evidence again of action on the part of Chicago bankers.

By 1890 Chicago had surpassed Boston in the volume of bankers' balances and was second only to New York as a reservoir of liquid funds. The local money market tapped intensively the entire Middle West for the accounts of country bankers, and bankers' balances in Chicago increased from about $66,000,000 in 1895 to $405,000,000 thirty years later. From the beginning it has been a regular practice for correspondents to borrow of the local banks to meet seasonal and other needs. Such connections with great numbers of country and city banks involving funds exceeded in volume only by New York are an earmark of an established banking center, one in which the standardization of practice and the adequacy of funds approaches that of a mature money market.[3]

As for investment banking: Until, say, 1900 only in small part did Chicago finance her capital requirements; increasingly, however, there were earnings from industry available for the putting back into business, and thrift accumulations which were invested directly in real estate and productive equipment; there were but few specialized savings institutions. Throughout the half-century ending with 1900, Chicago interests repeatedly appealed for eastern funds by setting forth the high rates of interest prevailing here and the ample security of the loans. The early security issues undertaken by local bankers were only rarely those of Chicago industries but rather were moderate offerings of municipali-

[3] As the bank-lending rates in Chicago tended lower—toward those prevailing in New York—it is likely that many corporations and local governments, as well as banks, throughout the Middle West, which previously had made a practice of borrowing in New York increasingly sought credit in Chicago. By 1900, for example, Chicago banks were assuming an important position as a source of funds for the Twin Cities, whereas the Atlantic Coast was depended upon relatively less. See Mildred Hartsough, *The Twin Cities as a Metropolitan Market* (Minneapolis, 1925), pp. 134 ff.

ties and public utilities in various localities throughout the Middle West. These were mostly sold in the East. Even though Chicago had become the railroad capital of America, none of such securities was handled here and but few were absorbed here.

The Chicago offices of eastern bankers were established primarily to solicit the underwriting of securities rather than their marketing. The city was a high money rate market. In 1902 at least nine New York houses had branch offices here. The war suddenly increased the prestige of Chicago as an investment banking center, and during the decade of the 1920's local houses offered more than five and a half billions in securities either alone or as syndicate head. With the aid of intensive selling campaigns and the appeal to local pride in the matter of building up an independent investment market, an increasing volume of the offerings was absorbed by Chicago and the surrounding region. From 1920 through 1930 the local houses took varying allotments in nearly ten billion dollars' worth of securities originated by bankers outside Chicago. This indicates that Chicago has become an important center for absorbing security offerings, which means an increasing maturity characterized by declining money rates.

The city both in commerce and in manufacturing has grown extremely rapidly; in the early stages a considerable portion of the yield of industry was returned directly to production. This was the course taken by early savings. Gradually surplus was accumulated beyond the immediate needs of the activity producing it, and we find funds being placed in municipal, public utility, and land-mortgage securities, some of these originating in the western and southern sections of the country, as well as in the Middle West.[4]

As for the banking structure itself, there took place a significant tendency toward concentration. In spite of an almost continuous increase in the number of outlying banks, the mergers of large downtown institutions were sufficient to work definitely in the direction of concentration for the city as a whole. Competition

[4] Chicago banks themselves have been large purchasers of securities, and since 1879 it has been a practice of local institutions to place seasonal surplus funds in the New York call-money market. These funds at times have reached large proportions.

became keen among large rivals, and a growing standardization of policy and credit instruments gave increasing evidence of maturity.[5]

II. RATES BEFORE 1890

The money rates prevailing in Chicago throughout the years ending with 1860 revealed essentially the inelasticity of the money-market forces. The nominal rate charged by the banks was 10 per cent; that was the legal maximum, and it was commonly regarded as the "regular" rate. There were, however, factors which tended, on the one hand, to increase the actual rate paid by borrowers and, on the other, those which worked in the direction of reductions from the nominal rate. Chief among the former was the practice of discounting time bills and notes payable in the East at the regular rate of discount plus the selling rate of New York exchange. Among the latter factors were, first, the more or less prevalent custom of making concessions to borrowers for various reasons and, second, shading the regular rate in the case of paper most acceptable. Typical of the latter by 1855 were grain bills.

After 1860, 10 per cent was the prevailing rate for a number of years. The double tribute of interest and exchange rate was continued as a practice, but the latter rate prevailed at considerably under that of the earlier period, hence it was not so important a factor.[6] Concessions we hear of now and again, but by the

[5] Another phase of competition has been that between the local banks and the commercial-paper houses. This rivalry was important throughout the generation ending with 1925, although it was acknowledged as early as the 1870's. Many of the best risks in Chicago alternated between their banks and the open market. Locally the open-market rates have tended a trifle below the rates at the banks, but the margin between them has narrowed in the direction of the former.

[6] This practice was countenanced by the National Bank Act of 1864 (see sec. 30 of the Act). The rate at which banks discounted sight bills on the East depended upon the abundance of balances in eastern banks. In the fall of 1862 we find that "New York exchange continues very abundant. . . . . Sight drafts on Buffalo, payable with exchange are taken generally at 3/8 discount; without exchange 3/4 is about the rate" (*Chicago Tribune*, October 18, 1862). And September 1, 1868: "Buffalo bills were taken at 3/8 off, and Oswego bills at 1/2 off" (*Chicago Republican*). "Shippers documentary bills on the seaboard cities were taken at 1/8 of 1 per cent discount, and on the lake ports, at 1/5 to 1/4 of one per cent off" (*Chicago Inter-Ocean*, September 13, 1877). August 15, 1878: "Shippers' documentary bills were taken from customers at 1/10 to 1/8 of one per cent discount" (*ibid.*).

middle of the 1870's they were probably much less common than before. In the early 1860's, on the other hand, there had been added to the grain and produce bills, which the bankers invited by more favorable rates, call loans secured by government bonds, and later such loans secured by other listed securities. As far as these factors are concerned, therefore, it appears that the net influence was in the direction of lower rates. It was the depression following the panic of 1873, and the increasing specialization of dealing in prime commercial paper in the open market, however, that brought them to a definitely lower level.

The discount rates of Chicago banks between 1860 and 1890 fall into three more or less well-defined periods: 1860–73, 1874–79, and 1880–89.

1. Throughout the years from 1860 through 1873, rates prevailed at not far from the level maintained during the earlier period; there were at times rather marked fluctuations, and a tendency now and then was discernible toward a lower figure. We find that early in July, 1862, they were quoted "at 7 @ 10 per cent. The lower is the more usual figure at the leading banks."[7] Shortly, 7 per cent was regarded as "the established rate for mercantile paper."[8] A little later "the usual range was 7 @ 10 per cent."[9] Early in October, 8 per cent was "the more usual figure."[10] And near the close of 1862 rates were "quite uniform at 10 per cent."[11]

Rates prevailed a trifle lower in 1863, notably during the summer; in August "good business paper was discounted at 6 @ 7 per cent."[12] Very soon the market worked closer: "The current rate of interest is 10 per cent, but one hears of occasional loans at 8 per cent."[13] Thirty days later the rates were "firm at 8 @ 10 per cent."[14]

During 1864 rates tended to higher figures. Almost at the outset as much as "2 per cent a month" was offered "to renew notes

[7] *Chicago Tribune*, July 4, 1862.
[8] *Ibid.*, July 23, 1862.
[9] *Ibid.*, August 12, 1862.
[10] *Ibid.*, October 8, 1862.
[11] *Ibid.*, December 13, 1862.
[12] *Chicago Weekly Journal*, August 21, 1863.
[13] *Chicago Daily Journal*, September 1, 1863.
[14] *Ibid.*, October 3, 1863.

30 days."[15] Shortly, 10 per cent was quoted as the "current rate."[16] At the beginning of April there was no change;[17] and at the close of June rates were "about 10 per cent."[18] At the close of the year they were "firm at 10 per cent."[19]

Again, 1865 was a year of high rates—"still 10 per cent per annum" in March.[20] The first call loans were quoted at that rate in April,[21] but they had declined to 8 per cent by July, with thirty- to sixty-day paper at 10 per cent.[22] In October "good paper" was taken at the latter figure.[23] This was the rate at the "leading discount houses," but borrowers at "the private banks" were charged a commission making "the rate equal to about 18 per cent per annum."[24]

Rates of 10 per cent appear to have prevailed throughout 1866. Call loans were reported at that figure in February.[25] In the summer "good paper was generally accepted . . . . at 10 per cent per annum."[26] This was the "usual" rate in October;[27] and it was observed near the close of November that "the market works easy at the usual bank rate—10 per cent."[28]

During the years 1867 and 1868 it was in call loans that the discount rate weakened; in June of the former year 8 per cent prevailed on such loans secured by governments.[29] In the autumn they were quoted at the same rate;[30] by June, 1868, with government bonds as collateral, they were discounted at 7 per cent.[31]

[15] *Chicago Times*, January 12, 1864

[16] *Ibid.*, February 20, 1864.

[17] *Chicago Weekly Journal*, April 1, 1864.

[18] *Chicago Tribune*, June 29, 1864.

[19] *Chicago Weekly Journal*, December 23, 1864.

[20] *Chicago Tribune*, March 11, 1865.

[21] *Ibid.*, April 6, 1865.

[22] *Chicago Weekly Journal*, July 14, 1865.

[23] *Ibid.*, October 6, 1865.

[24] *Chicago Tribune*, October 13, 1865.

[25] *Chicago Republican*, February 1, 1866.

[26] *Chicago Tribune*, July 11, 1866.

[27] *Ibid.*, October 12, 1866.

[28] *Ibid.*, November 25, 1866.

[29] *Chicago Weekly Journal*, June 5, 1867.

[30] *Chicago Republican*, September 13, 1867.

[31] *Ibid.*, June 4, 1868.

And this rate appears to have prevailed during the remainder of the year. Ten per cent was the usual rate for time paper throughout these years; in September, 1868, it was regarded as "the uniform rate all around."[32]

In the summer of 1869, 10 per cent was "the common rate to regular customers of banks"; but it was reported that there was at least one case of a national bank making loans through its "directors or one of the officers . . . . to particular brokers," and that such loans were ultimately made "at from 1½ to 2 per cent per month . . . . [thus] a greater rate of interest than is allowed by the laws of the State is sometimes" obtained.[33] Such was the speculative demand that "there is scarcely any time when money is active that such rates are not paid by parties who are not regularly in trade but are general speculators."

"All prime bankable short-date paper . . . . [was] accepted at the usual rate of 10 per cent" in the autumn of 1870.[34] Two seasons later 8 per cent was the rate on "well secured loans."[35] By September, 10 per cent was regarded as "the nominal rate" at the banks, but "on the street money [was] quoted on short time at from 7 to 8 per cent and on call at from 5 to 6 per cent."[36] Early in 1872 we read that "the city banks are nominally asking 10 per cent but call loans on government bonds especially can be negotiated at a reduced rate."[37] A year later "rates of interest [were] firm at 10 per cent per annum at the banks."[38] And that rate was regarded as "current" in June of the same year.[39] Shortly, "loanable funds" were reported "abundant and 60-day loans . . . . at 8 per cent."[40] Near the close of August (1873) "call loans

[32] *Ibid.*, September 14, 1868.

[33] *Chicago Tribune*, July 12, 1869.

[34] *Chicago Weekly Journal*, September 21, 1870. It was said that "the most of our banks refuse to discount at less than 10 per cent, under any circumstances, and, even in such times of plethora as the present, their general policy is, to keep the money drained off to New York to an extent that will keep the market here up to the 10 per cent rate" (*Chicago Tribune*, April 29, 1870).

[35] *Chicago Weekly Journal*, May 24, 1871.

[36] *Ibid.*, September 13, 1871.

[37] *Ibid.*, February 7, 1872.

[38] *Ibid.*, April 23, 1873.

[39] *Ibid.*, June 25, 1873.

[40] *Ibid.*, July 9, 1873.

[were] made at from 7 to 8 per cent."[41] Soon, with a panic at hand, the banks were "managing their affairs with . . . . caution"; and the maximum legal rate prevailed.[42] Toward the close of the year: "The banks are offering money to their regular customers for 30 or 60 days, at 10 per cent, and on demand loans, with collaterals, at 7 and 8 per cent."[43]

A review of discount rates during the years from 1860 through 1873 reveals that the competitive forces in the local money market were working themselves out in a cumbersome fashion. The rates as published in the financial columns of the newspapers can in no sense be regarded as sensitive indices of the local demand and supply of funds. The total lack of any specialized markets within the local money market itself, such as, for example, a call-loan market or that of prime commercial paper, together with the fact that concessions were frequently made to borrowers, forced the local compilers to use such terms as the "ordinary," "nominal," or "usual" rate. Differential rates as between the several types of bankable paper were slow in developing; it was, however, in demand loans secured by government bonds that the first significant break occurred in the long-established rate. Competitive forces showed themselves more clearly throughout the following period.

2. The years from 1874 through 1879 saw the collapse of the traditional rate of 10 per cent, first, at the hands of economic factors and, shortly, at the hands of the state legislature. Among the first signs of the business depression following the panic of 1873 was the weakening of the discount rates. Early in March, 1874, money was "abundant and easy at 10 per cent."[44] In June it was said that "money was never so cheap in this market as it is now. Five per cent for call loans and from 7 to 8 per cent for 60-day loans on collaterals are unprecedented rates."[45] The break in the rates occurred first at the brokerage houses where money was offered at 5 per cent for thirty days. That was said to have

[41] *Ibid.*, August 27, 1873.
[42] *Ibid.*, September 10, 1873.
[43] *Chicago Tribune*, December 15, 1873.
[44] *Chicago Weekly Journal*, March 4, 1874.
[45] *Chicago Inter-Ocean*, June 22, 1874.

been "the lowest price at which money was ever offered in this market."[46] The demand for money did not keep pace with the supply,[47] and even by the middle of October there was "no indication of any hardening in the rates."[48] It was observed that "there is reason for thinking that a permanent decline in the average rate of interest in this market has taken place."[49]

Early in 1875 "call loans were made at 7 and 8 per cent,"[50] and by midyear we are told that "the largest part of the discount lines of some of our banks is loaned at 8 per cent or less. The amount of 10 per cent paper they hold is no longer the bulk of their bills receivable."[51] A few days later: "Loans have been made as low as 6 per cent for 60 days on single-name paper, a rate hitherto unheard of in this market."[52] This followed from the fact that "there was never as much money in the Chicago market as at present."[53] Rates on real estate loans also declined; it was said that "the first 7 per cent loan on real estate ever made in Chicago, was in 1875."[54] The *Inter-Ocean* in April, 1876, regarded sixty- and ninety-day loans "on warehouse receipts . . . . at 6 per cent per annum" as a history-making event "in this market."[55] Near the close of August it was observed that "the rates of discount to regular customers at the banks continue to be quoted at 8 @ 10 per cent, although [it was not uncommon for] first-class short paper [to be taken] at 2 @ 3 per cent below the regular quotations."[56] The *Post* quoted "a leading banker" in the following month as saying, "Ten per cent is about played out."[57]

Throughout 1877 and 1878 the rates on prime bankable paper appeared to range from 6 to 8 per cent, with a tendency toward

[46] *Ibid.*, June 15, 1874.

[47] *Chicago Weekly Journal*, June 17, 1874.

[48] *Ibid.*, October 14, 1874.

[49] *Chicago Inter-Ocean*, October 16, 1874.

[50] *Chicago Weekly Journal*, February 24, 1875.

[51] *Chicago Tribune*, July 8, 1875. [52] *Ibid.*, July 12, 1875.

[53] *Chicago Inter-Ocean*, September 13, 1875.

[54] *The Economist* (Chicago), II (June 15, 1889), 499.

[55] April 4, 1876.

[56] *Chicago Post*, August 22, 1876. [57] *Ibid.*, September 8, 1876.

the higher figure, and even 10 per cent in the autumn. In November of the latter year they were quoted at from 8 to 10 per cent "on time," and from 5 to 6 per cent "on call."[58] At the opening of 1879, 7 and 8 per cent were reported as the prevailing rates.[59] Call loans in April were being discounted at 4 and 5 per cent, and "in special cases" time rates were 6 per cent.[60] Shortly: "Choice names and grain and provision collaterals are in demand at 5 @ 6 per cent, while fair business paper pays 7 @ 8 per cent."[61] And "with governments as collateral money loaned at four per cent."[62]

Then, as if to definitely seal the fate of 10 per cent in Illinois, there was enacted the interest law, effective July 1, 1879, which made 8 per cent the maximum rate.[63] In December, "eight per cent, was, as usual, the quoted rate."[64]

3. The decade of the 1880's, as far as discount rates were concerned, approximated much more closely the present-day money market than did the preceding years. Several factors contributed to this situation: Competitive forces were much more effective in truly determining market rates than theretofore; a large factor in this was specialization. This factor revealed itself as between departments of a given bank, as between banks themselves, and as between specialized financial houses, such as commercial-paper brokers and real estate mortgage firms. It follows that bankable paper came to be more and more minutely defined. Moreover, by the beginning of the 1880's—1879 to be exact—local banks had begun the practice of loaning directly in the New York call-money market. This tended normally to reduce the differentials as between rates in the two money markets.

In view of these factors, therefore, and also in view of the fact

[58] *Chicago Weekly Journal*, November 27, 1878.

[59] *Ibid.*, January 1, 1879. [60] *Ibid.*, April 23, 1879.

[61] *Chicago Inter-Ocean*, June 4, 1879.

[62] *Chicago Weekly Journal*, June 25, 1879.

[63] *Laws of Illinois* (1879), p. 185.

[64] *Chicago Inter-Ocean*, December 19, 1879. For those borrowers, quite "a numerous class," who had no regular line of bank credit, it was "strongly hinted," paid 10 per cent. It was said that "the laws prohibit the lending of money at over eight per cent, but the statute is easily evaded by charging the extra two per cent as commissions" (*ibid.*).

that Chicago had unused banking facilities when the new decade launched the business community into an era of prosperity, it is not surprising to find the level of rates at very close to, perhaps a trifle above, that which prevailed throughout the years from 1874 to 1879.

By the middle of 1880 time bills were discounted at 6 and 7 per cent;[65] and from 5 to 7 per cent in August.[66] Toward the close of the year, rates prevailed at 7–8 per cent. These were representative rates on prime bankable paper during "the most prosperous year in the history of Chicago" up to that time.[67]

For the year 1881, "except in a short, dull summer period, rates on commercial loans [were] from 6 to 8 per cent, and on real estate from 5 to 8 per cent, closing strong at near the latter rate."[68] In April, 1882, the rates were "easy" at from 5 to 7 per cent;[69] and in September, from 4 to 7 per cent, "but generally from 5 to 6 per cent."[70] The manager of the local clearing-house reported to the *Commercial and Financial Chronicle* prevailing rates by month for the years 1883–85 on call loans and prime sixty- to ninety-day paper.[71] Rates on the latter showed a slight decline and by 1885 fluctuated close to the 5 per cent level. It was observed in New York that Chicago "borrowers have had the benefit of continuously lower rates only during the last year or so."[72] This monthly tabulation, probably the first officially compiled rates in the city, reveals a strong seasonal movement; rates were lowest in the summer, with the peak reached late in the autumn and winter.

It was reported that throughout 1888 "interest and discount rates . . . . ruled at from 5 to 7 per cent."[73] "Collateral loans [were] quoted at from 5 to 6 per cent with discount rates on business paper at from 6 to 7 per cent," in September of the following year.[74]

[65] *Chicago Weekly Journal*, June 30, 1880.

[66] *Ibid.*, August 11, 1880.

[67] *Ibid.*, January 5, 1881.

[68] *Ibid.*, January 4, 1882.

[69] *Ibid.*, April 26, 1882.

[70] *Ibid.*, September 6, 1882.

[71] See Table 1.

[72] *Commercial and Financial Chronicle*, XLII (1886), 355. Chicago rates were significantly lower than those of her old rivals, St. Louis and New Orleans.

[73] *Chicago Weekly Journal*, January 2, 1889.

[74] *Ibid.*, September 25, 1889.

We are told in the fall of 1888 that "money lenders claim that in seven years before [*sic*] there has not been such steadiness and lack of special business activity as calls for none than ordinary assistance."[75] Such were the stabilizing effects of competitive forces, which for a considerable period, had for the first time manifested themselves in local banking. By 1890 the characteristic lines along which the Chicago money market was to develop had been clearly established.

TABLE 1*

CUSTOMER LOAN RATES IN CHICAGO, 1883–85

Month	1883		1884		1885	
	Call Loans	Prime Paper (60–90 Days)	Call Loans	Prime Paper (60–90 Days)	Call Loans	Prime Paper (60–90 Days)
January	5 –5½	6–7	5	5–6	5½–6	6
February	5	6–7	5	5–6	5½	6
March	5	6½	5	5–6	5	5½–6
April	4½	6	4½	5–5½	5	5½
May	4	5½	4–7	4–8	4½	5
June	3½–4	5	6	6–7	4	4 –4½
July	3½–4	4½	6	6–7	3 –4	4 –4½
August	3½–4	4½	6	6–7	3½	4½
September	4	5	5½	6–7	4	5
October	4½–5	5½	6	7	4½	5
November	5	6	6	7	4½	5 –5½
December	5 –5½	6	6	7	5	5½–6

* Source: *Commercial and Financial Chronicle*, XLII (1886), 355.

III. RATES AFTER 1890

The same forces continue to operate as in the earlier period. A continuous series of bank-lending rates in Chicago from 1890 to the present time is set forth in Table 2. For the period through 1918 these monthly rates were compiled from weekly quotations published in *The Economist* (Chicago) and are fairly representative of the rates which important downtown banks charged their customers on relatively high-grade paper. From 1919 through 1930 the Federal Reserve Board collected data on Chicago money rates, making the first government compilation of such rates.

[75] *Ibid.*, October 24, 1888.

TABLE 2*

MONEY RATES IN CHICAGO, 1890–1936

Month	1890	1891	1892	1893	1894	1895	1896	1897	1898	1899
January	6.75	7.00	5.75	6.12	5.75	5.50	6.00	5.50	5.05	4.19
February	6.31	6.50	5.75	5.87	5.33	5.33	6.20	5.25	5.00	4.67
March	6.45	6.25	5.50	6.37	4.60	5.37	6.50	5.12	5.08	4.67
April	6.18	5.87	5.25	6.50	4.50	5.75	6.37	5.75	6.40	4.35
May	5.90	5.65	5.31	5.12	4.50	5.50	6.60	5.20	5.94	3.87
June	5.81	5.58	5.00	7.00	4.30	5.33	5.87	5.17	5.19	4.00
July	6.37	5.94	5.05	7.00	4.25	5.00	5.67	4.30	5.90	5.20
August	6.70	5.95	5.00	7.00	4.50	5.50	6.50	4.81	5.12	4.19
September	6.62	6.00	5.75	7.00	4.50	5.50	7.00	5.18	5.25	4.16
October	6.62	5.90	6.00	6.62	4.87	5.55	6.25	5.25	5.25	6.12
November	6.85	6.00	6.33	6.25	4.50	5.60	6.00	5.06	4.69	6.00
December	7.12	6.12	7.05	6.40	5.00	5.16	5.87	5.00	4.70	6.10

Month	1900	1901	1902	1903	1904	1905	1906	1907	1908	1909
January	6.00	4.37	4.87	5.55	5.34	4.06	5.75	6.00	7.00	4.45
February	5.00	4.00	4.25	5.00	5.00	4.50	5.00	5.69	5.95	4.50
March	5.55	4.15	4.81	5.43	5.00	4.69	5.45	5.97	5.65	4.31
April	5.12	4.25	4.75	5.69	4.75	4.75	5.62	5.87	5.50	4.50
May	4.81	4.44	4.80	5.30	4.56	4.75	5.62	5.69	4.70	4.40
June	4.25	3.95	4.50	5.31	4.56	4.75	5.50	5.55	4.44	4.50
July	4.56	4.56	4.81	5.89	4.65	4.60	5.75	5.82	4.37	4.50
August	4.50	4.55	4.40	5.95	4.75	4.75	5.75	6.15	4.50	4.81
September	4.70	4.93	5.31	5.75	4.75	4.75	5.97	6.44	4.50	4.97
October	5.19	4.62	6.00	5.90	4.80	5.06	6.00	6.62	4.55	5.05
November	4.87	4.75	6.00	6.00	4.56	5.56	6.00	7.30	4.55	5.25
December	4.85	5.12	6.00	5.55	4.50	5.65	6.00	7.44	4.50	5.18

Month	1910	1911	1912	1913	1914	1915	1916	1917	1918	1919
January	4.95	4.75	4.28	5.68	5.55	4.95	3.92	4.53	5.87	5.75
February	4.75	4.62	4.25	5.06	4.75	4.37	3.94	4.87	6.00	5.75
March	4.75	4.56	4.38	5.47	4.72	4.50	4.37	4.80	6.00	5.75
April	5.00	4.30	4.87	5.87	4.44	4.37	4.30	5.00	6.00	5.75
May	5.50	4.18	5.06	5.55	4.50	4.40	4.37	4.94	6.00	5.62
June	5.12	4.44	5.00	5.81	4.50	4.06	4.37	5.45	6.00	5.75
July	5.30	4.40	4.87	6.25	4.81	4.06	4.50	5.55	6.00	5.75
August	5.75	4.44	5.22	6.20	6.65	4.50	4.55	5.25	6.00	5.75
September	5.75	4.75	5.87	6.03	7.12	4.25	4.70	5.50	6.00	5.75
October	5.65	4.59	5.80	6.00	7.00	4.15	4.55	5.69	6.00	5.75
November	5.62	4.81	5.80	6.00	6.25	4.19	4.75	5.69	6.00	5.75
December	5.15	4.75	6.06	5.78	5.37	3.94	4.70	5.75	6.00	5.75

* These are bank-lending rates on prime commercial loans; 1890–1918—monthly averages of weekly rates, source: *The Economist* (Chicago). 1919–30—rates on prime commercial loans as of middle of the month, source: *Federal Reserve Bulletin*. 1931–36—rates on prime commercial loans prevailing during the week ending the fifteenth of the month, source: Federal Reserve Bank of Chicago, *Business Conditions* (monthly).

TABLE 2*—*Continued*

Month	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929
January	5.75	7.00	6.00	5.25	5.50	4.50	4.75	4.75	4.37	5.75
February	5.75	7.00	5.75	5.00	5.25	4.50	4.75	4.75	4.50	5.75
March	6.25	7.00	5.75	5.50	5.25	4.50	4.75	4.50	4.62	5.75
April	7.00	7.00	5.25	5.25	5.25	4.75	4.75	4.50	4.50	5.75
May	6.75	6.75	5.50	5.50	5.00	4.75	4.75	4.75	4.75	5.75
June	7.00	7.00	5.50	5.50	4.75	4.75	4.75	4.50	5.12	5.75
July	7.00	7.00	5.25	5.50	5.00	4.75	4.75	4.75	5.25	5.75
August	7.00	6.50	5.25	5.75	4.50	4.75	4.75	4.75	5.25	5.87
September	7.00	6.50	5.00	5.75	4.50	4.50	4.75	4.50	5.50	6.00
October	7.00	6.75	5.00	5.50	4.50	4.75	4.87	4.50	5.50	6.12
November	7.00	6.25	5.25	5.25	4.50	4.75	4.87	4.62	5.50	6.00
December	7.00	6.12	5.25	5.25	4.50	4.75	4.87	4.37	5.62	5.75

Month	1930	1931	1932	1933	1934	1935	1936
January	5.75	4.37	4.62	4.50	3.75	3.25	3.25
February	6.12	4.25	4.75	4.75	4.00	3.25	3.25
March	5.25	4.50	4.75	4.75	4.00	3.25	3.25
April	4.75	4.25	4.75	4.50	3.75	3.25	3.25
May	4.75	3.87	4.75	4.50	3.25	3.25	3.25
June	4.62	4.00	4.75	4.50	3.25	3.25	3.25
July	4.50	3.87	4.50	4.50	3.25	3.25	3.25
August	4.50	4.12	4.62	4.00	3.25	3.25	3.25
September	4.50	4.00	4.50	4.00	3.75	3.25	3.25
October	4.25	3.87	4.50	4.00	3.25	3.25	3.00
November	4.25	4.37	4.50	4.00	3.25	3.25	3.00
December	4.25	4.75	4.50	3.75	3.25	3.25	3.00

Since 1930 this series has been continued by the Federal Reserve Bank of Chicago and published in its monthly bulletin. These data are arranged cyclically in Table 3 and briefly treated.

There is a rather pronounced consistency in the duration of the money-rate cycle of between three and four years. While the business cycle is typically of much the same periodicity as that of rates, the several phases of the two cycles often only roughly coincide. A lag of several months is not uncommon. Generally speaking, there is a somewhat closer synchronization of the two series during depression periods than during those of prosperity. Thus, rates in Chicago tend to be lowest when business activity is at lowest ebb. This was particularly true in such years as 1894, 1908, 1911, 1914, and 1931. But, on the other hand, rates were declining or had reached low in the first half of 1892, 1899, and

1901 and the latter half of 1915, 1919, and 1927, when industry generally was active. On the whole, local rates have responded considerably more slowly to the upward swing in business than to the downward; this tendency, however, has prevailed but little since early in the 1920's.

It is found that the movement of New York rates parallels general business a little more closely than that of rates in Chicago; but, as in the case of the latter, it has been during the activity

TABLE 3

CHICAGO MONEY RATES BY CYCLES, 1890–1936

Cycle (Approximately)	Duration (Months)	Average Rate
1890–July, 1893	43	6.12
August, 1893—August, 1896	37	5.53
September, 1896—September, 1899	37	5.12
October, 1899—October, 1903	49	5.05
November, 1903—October, 1907	48	5.31
November, 1907—August, 1910	34	5.08
September, 1910—June, 1913	34	5.05
July, 1913—December, 1917	54	5.00
January, 1918—May, 1920	29	5.94
June, 1920—June, 1923	37	6.21
July, 1923—July, 1929	73	4.12
August, 1929—December, 1931	29	4.73
January, 1932—December, 1936	60	3.77

phase of the business cycle that the greatest lag has occurred in the New York series.

Table 3 shows the average rate prevailing on prime commercial paper in Chicago during the several cycles. Taking the entire period of almost fifty years, a significant decline in rates has taken place. The decline has not been unbroken but, on the whole, persistent. From 1890 through the cycle ending in the autumn of 1903 the average rate by cycle fell consistently from 6.12 to 5.05 per cent. This movement was checked during the years from 1903 to 1907, only to continue again until the effects of the World War and the post-war inflation made themselves felt. Then, with the gradual decline in 1923 and 1924, the rates were taken to the lowest sustained level in the history of the local money market; the average over a period of six years was 4.12 per cent. And this

was a time of fairly active business, of increasing speculation on the stock exchange, and of a real estate boom. The depression years which followed, of course, carried rates to still lower levels.

Seasonal variation in rates.—An analysis of the seasonality of money rates in Chicago reveals a characteristic movement from a relatively high level in the early spring to a low in June and July, then with August a rise which by September and October takes them to the peak for the year.[76] The low level of rates in the early summer reflects diminished demand for bank credit; this seasonal falling-off in credit demand has been traditional in Chicago and reflects a favorable movement of trade which persists from early spring. The peak of rates in the autumn represents the maximum demand for credit; a large part of this increased demand comes from country correspondents.[77]

The seasonal indices of Chicago rates and loans made by the local banks and those of New York rates and loans are given in Table 4. The seasonal movements of rates and loans closely parallel one another in both centers, but particularly in Chicago. There, both series definitely reach their peak in the fall and tend to be lowest in summer. In New York, rates and loans are at their highest level in the winter season and at their lowest level during spring and summer.[78]

[76] Five years were selected to study the seasonal variation: 1897, 1903, 1915, 1923, and 1927. The rates were those charged by banks on prime commercial paper; deviations were computed from the arithmetic mean, and a three-month moving average was used.

[77] It is likely that for the entire Seventh District there are important seasonal influences affecting the demand for bank credit but that they are "diverse and neutralizing." Automobile production probably dominates the seasonal variation in the movement of funds with the entire country. Somewhat less important factors are "financial influences," interest, dividend payments, etc. See B. H. Beckhart, J. G. Smith, and W. A. Brown, *The New York Money Market* (New York, 1932), IV, 467–69.

[78] G. W. Woodworth (*The Detroit Money Market* [Bureau of Business Research, University of Michigan Bull. V, No. 2 (1932)], p. 374) constructs seasonal indices of customers' loan rates in Detroit and New York and finds that in both centers they reach their peak in the winter and are lowest from June through September. A study of rates reported by banks in the middle western Reserve bank cities—Chicago, Cleveland, Minneapolis, and St. Louis—for the years 1922–30, shows that their peak was reached in December and their low in April. For the Reserve branch

It is likely that the Federal Reserve System has tended to reduce the seasonal variation in rates (in Table 4 for both rates and loans the period for analysis extended into pre-Reserve System years).[79] The four seasonal indices show that the range of seasonality is greater in the case of New York rates than in that of Chicago. Sensitivity is a factor in seasonality, and, when it is measured in terms of month-to-month deviations, the rates in

TABLE 4

SEASONAL INDICES OF CHICAGO AND NEW YORK BANK RATES AND LOANS

Season	Money Rates*	Loans†
Chicago:		
Winter	100.3	99.0
Spring	100.0	99.5
Summer	98.6	99.2
Fall	101.5	102.4
New York:		
Winter	103.8	105.5
Spring	100.4	95.9
Summer	92.7	100.2
Fall	102.8	98.4

* Monthly deviations in percentages of the mean were computed, then, with the mean as 100, monthly seasonal indices were arrived at. These were reduced to four seasons: winter (November, December, and January); spring (February, March, and April); summer (May, June, and July), etc.

† See *Seasonal and Cyclical Movements of the Loans and Investments of Chicago Banks* (University of Illinois, Bureau of Business Research, Bull. 30 [Urbana, 1930]), p. 12.

New York reveal a far greater degree of it than do the Chicago rates. From 1890 through 1917 monthly variations in both rates were much in excess of those during the years following 1917. This was probably due in part to the influence of the Federal Reserve, and in part to the fact that commencing with 1918 a new rate series was used in the present analysis—rates as of the

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cities in this region the months were found to be December and June, respectively. See J. W. Keener, "Short-Term Financing in the Meat-packing Industry" (University of Chicago dissertation [unpublished], 1930), p. 112.

[79] The years 1922–30 reveal a much less variation (see Woodworth, *op. cit.*, p. 374). W. R. Burgess finds that the seasonal swings of interest rates "have been much reduced" since the establishment of the Reserve System (*The Reserve Banks and the Money Market* [New York, 1927], pp. 290–91).

middle of each month and hence not quite as representative as the averages of weekly rates employed in the analysis of the earlier period. Throughout the earlier period the monthly deviations of the New York rates were much greater than those in Chicago, and, while the fluctuations were reduced in the later period, they still exceeded those of the Chicago rates.

TABLE 5*

PREVAILING RATES CHARGED CUSTOMERS ON VARIOUS TYPES OF PAPER BY CHICAGO AND NEW YORK BANKS, 1919–30

Year	Chicago				New York			
	Prime Commercial Loans (30–90 Days)	Collateral Demand Loans	Loans Secured by Liberty Bonds and Ctfs. of Indebtedness	Interbank Loans	Prime Commercial Loans (30–90 Days)	Collateral Demand Loans	Loans Secured by Liberty Bonds and Ctfs. of Indebtedness	Interbank Loans
1919	5.74	5.71	5.56	5.53	5.48	5.73	4.90	5.18
1920	6.71	6.75	6.56	6.71	6.38	6.52	5.96	6.19
1921	6.74	6.83	6.69	6.83	6.52	6.17	6.00	6.50
1922	5.40	5.44	5.41	5.65	5.08	4.90	4.98	4.78
1923	5.42	5.47	5.65	5.31	5.25	5.12	4.96	5.16
1924	4.96	4.84	5.36	5.15	4.72	4.09	4.91	4.81
1925	4.67	4.74	5.06	5.00	4.49	4.55	4.84	4.65
1926	4.78	4.99	5.18	5.06	4.57	4.74	4.96	4.80
1927	4.58	4.67	4.83	5.04	4.44	4.73	4.91	4.51
1928	5.04	5.49	5.34	5.23	4.54	5.34	5.46	5.01
1929	5.83	6.47	6.00	5.86	5.78	5.96	5.95	5.86
1930	4.75	5.19	5.19	5.28	4.61	5.00	4.98	4.67

* These are yearly averages of monthly rates. Source: *Federal Reserve Bulletin.*

Rates charged customers on various classes of paper.—Data are available covering monthly rates on prime commercial loans, demand loans secured by stock-exchange collateral, loans secured by Liberty bonds, and interbank loans. Yearly averages are shown in Table 5 for the period from 1919 through 1930. The general movement of these rates, as might be expected, was very similar. On the whole, prime commercial paper was taken by the local banks at the lowest rates. The rates charged on this class of loan have been especially under other rates since 1922. The

fact that they so prevailed under such well-collateraled loans as those secured by stock-exchange collateral, Liberty bonds, and loans to correspondent banks indicates the extent to which intimate relations between banker and customer is a factor in rate determination. This also indicates something as to the status reached by a given money market relative to others. Among thirty-four cities in 1926 there were only nine which reported rates on commercial loans to be lower than those on stock-exchange collateral loans and on interbank loans; of these, Chicago, with but two or three exceptions, made the best relative showing for the former type of loan.

In Chicago the rates on demand loans secured by stock-exchange collateral tended to prevail above the charges on other paper, and those on loans to correspondents moved between commercial-paper rates and loans collateraled by government bonds. During the years from 1923 through 1926, rates on loans secured by Liberty bonds ruled above those on other paper.

Rates on the foregoing classes of paper in New York tended to prevail a little below those in Chicago, and they show somewhat wider fluctuations. The general movement of prime commercial rates, however, is remarkably uniform, although those of New York banks reach their peak more quickly than do those of Chicago, and during 1934–36 (not shown in table) they fell much more rapidly. Again, in the case of demand loans secured by stocks and bonds—speculative credit—the New York rates prevailed under the corresponding rates in Chicago, with the latter rates the less responsive.

In the rates on loans secured by Liberty bonds there is a more sluggish movement in both New York and Chicago than in the foregoing series, with the New York rates most of the time significantly under those of Chicago.[80] Rates on interbank loans made by New York and Chicago institutions appear to show but slight fluctuations, with the rates charged by the latter a trifle higher than those in New York.

[80] The fact that this security for bank loans is identical, it has been pointed out, indicates that geographical location is a persistent factor in rate differentials. See W. W. Riefler, *Money Rates and Money Markets in the United States* (New York, 1930), p. 80.

IV. MONEY RATES IN CHICAGO AS COMPARED WITH THOSE IN OTHER CENTERS

Based upon weekly rates published in *Bradstreet's*, R. M. Breckenridge analyzed average money rates prevailing in some forty cities for the years from 1893 to 1897 inclusive.[81] These bank-lending rates (averages of the five-year period) ranged from 4.44 per cent for Boston to 10.96 per cent for Seattle. In seven cities rates prevailed at lower levels than in Chicago (Table 6).

TABLE 6

BANK-LENDING RATES PREVAILING IN EIGHT CITIES AS COMPARED WITH RANK IN POPULATION AND IN BANK CLEARINGS, 1893–97

City	Rate	Rank in Population	Rank in Bank Clearings
Boston	4.44	5	2
Baltimore	4.86	6	7
New York	4.88	1	1
Hartford	5.00	28	25
Providence	5.35	20	16
Cincinnati	5.44	8	9
Philadelphia	5.82	3	4
Chicago	6.13	2	3

It is to be observed that the rates in both Boston and Baltimore were a trifle lower than those in New York and that Philadelphia followed such centers as Hartford, Providence, and Cincinnati in the order of rates. Chicago was eighth among the important cities of the country with 6.13 per cent. All the centers making a more favorable showing than Chicago except Cincinnati, were Atlantic seacoast cities, and while Cincinnati, along with Chicago, is regarded in middle western territory, yet the latter is considerably west of Cincinnati and much the younger market. Breckenridge concludes that there is but little relation between either size of city or volume of bank clearings and discount rates but that there is a correspondence between geographical situation and rates: "The discount rate appears to be higher, generally speak-

[81] "Branch Banking and Discount Rates," *Banker's Magazine*, LVIII (1899), 38 ff.

ing, the further west the town for which it is quoted."[82] However, it is probably true that among important banking centers, in the long run, there is a direct correlation between population and rates and between an index of financial transactions, such as bank clearings, and rates.

Cities in the entire Middle West with prevailing money rates from 1893 to 1897 were reported as shown in Table 7. Chicago was found to have rates lower than those of its old rival, St. Louis, and significantly lower than those in Cleveland. On the whole,

TABLE 7

BANK-LENDING RATES PREVAILING IN MIDWESTERN CITIES, 1893–97

City	Rate	Rank in Population	Rank in Bank Clearings
Cincinnati	5.44	8	9
Chicago	6.13	2	3
Detroit	6.54	13	15
St. Louis	6.57	4	5
Milwaukee	6.64	14	17
Cleveland	6.68	9	14
St. Paul	7.00	18	21
Indianapolis	7.18	22	19
Minneapolis	7.35	15	12
St. Joseph, Mo.	7.49	29	31
Kansas City, Mo.	7.64	19	10
Duluth	7.74	38	.....

centers northwest and southwest of Chicago had higher rates than cities to the east and southeast. With no attempt at weighting, the former group revealed an average of 7.2 per cent, and the latter, 6.46 per cent. An exceptional case was Indianapolis, with higher rates than St. Paul. And only with the exception of the former the western group of cities were smaller than those east of Chicago. The actual volume of banking business, however, as measured in terms of clearing-house transactions appears to be less of an index of rate differentials. St. Louis, Minneapolis, and Kansas City, for example, reveal a much higher relative position

[82] R. M. Breckenridge, "Discount Rates in the United States," *Political Science Quarterly*, XIII (1898), 125.

in bank clearings than in favorable rate levels. The southern, western, and Pacific states were found to be the areas of highest rates.

More thoroughgoing than this early compilation of rates was that made by the Federal Reserve Board from 1918 to 1930[83] and analyzed by W. W. Riefler.[84] Rates were collected from a selected group of banks in each of the Federal Reserve Bank and branch cities—some thirty-five localities in all. Several classes of paper and maturities were included.

Twenty cities with their average monthly rates reported on six major types of loans, 1919–25, were as follows:

City	Rate	City	Rate
New York	5.33	Dallas	6.28
Boston	5.48	Birmingham	6.28
Chicago	5.68	Denver	6.32
St. Louis	5.78	El Paso	6.51
San Francisco	5.89	Jacksonville	6.51
Cincinnati	5.92	Portland	6.57
Detroit	6.00	Seattle	6.57
Cleveland	6.04	Little Rock	6.64
Atlanta	6.10	Spokane	6.84
Kansas City	6.14	Salt Lake City	6.98

Whereas Chicago ranked fifth in relatively low discount rates among the important money markets in the 1890's, now it was

[83] This was the first official compilation of such rates. Since 1930 a number of the Federal Reserve banks, notably New York and Chicago, have published weekly representative bank-lending rates prevailing in their respective cities. In a National Monetary Commission Report (A. P. Andrew, *Statistics for the United States, 1867–1909* [Washington, 1910], pp. 119 ff.) several rates in the New York market are presented weekly from 1890 to 1909.

[84] *Op. cit.* The relative independence in rate-making by cities remote from New York was observed in 1886: "There are many important centers of trade apart from New York, which, if they do not move in entirely independent orbits, yet within certain limits do follow a course of their own. For instance, New York may determine rates for Philadelphia and other nearby points, and even for Boston, but obviously when it comes to points like St. Louis, Kansas City, New Orleans or San Francisco, the case is quite different" (*Commercial and Financial Chronicle*, XLII [1886], 355). Factors which tend to reduce the differentials as between various sections of the country are tendencies toward industrialization, larger banking units with probably lower costs per loan, and increasing effectiveness of the Federal Reserve System, making it possible for banks to accommodate borrowers. See Keener, *op. cit.*, p. 124.

third.[85] Moreover, the differential between Chicago and the most favorable rate center for borrowers was lessened enormously. In the earlier period rates in Chicago were as much as 1.69 per cent higher than in the lowest market—Boston. A generation later the differential was only thirty-five hundredths of 1 per cent, with New York in the most favorable position. This source did not include in its compilation Baltimore, Hartford, and Providence —rates in all of which were lower than in Chicago in the 1890's. It is not likely, however, that by the 1920's these cities still occupied a similar position relative to the latter. None of them held the place in a volume of banking transactions which they formerly held. Baltimore ranked seventh in clearings in 1897 but was only in twelfth place in 1927, and whereas Hartford and Providence were in the twenty-fifth and sixteenth positions, respectively, earlier, in 1927 they had been lowered to fortieth and forty-first. But even though relatively low rates prevail in these centers they are secondary markets, and a factor in their rate structures is the keen competition of such low-rate banking centers as New York and Boston.

While Chicago may be said to rank third in money rates and to have progressed far in the direction of more favorable rates during the last generation, other centers show equally good progress. Rates in St. Louis, for example, which in the 1920's, averaged 5.78 per cent were 6.56 per cent thirty years before. This is a greater reduction than took place in the case of Chicago. San Francisco also showed a notable decline from 6.55 to 5.89 per cent. At present these cities follow Chicago in the matter of rates, but the margin is not wide. The tendency with respect to San Francisco is far more significant than that of St. Louis, as it has expanded much more rapidly as a banking center than has

[85] Burgess finds that Chicago was also fifth in 1911–13, with an average of 5.98 per cent on prime four to six months' paper; the New York rate averaged 4.74 per cent (*op. cit.*, p. 288). In 1890 Chicago ranked ninth among the largest cities of the United States in rates on real estate loans with an average of 6.4 per cent; in lowest position was New York with 5 per cent. Thirty years later Chicago with Philadelphia and St. Louis was in fifth place with a rate of 5.9 per cent. United States Department of Commerce, Bureau of the Census, *Mortgages on Homes, 1920* (Census Monograph II [Washington, 1923]), p. 126.

the latter. San Francisco has become for California what Chicago had already become for a large portion of the Middle West.

An interesting change took place between Chicago and Cincinnati. Whereas the latter reported the lower rates in the 1890's, Chicago not only attained the position of this older center but bettered it. The rate level in Cincinnati is actually a trifle above what it was a generation ago. While both Detroit and Cleveland reveal slightly declining rates they remain in an even less favorable position relative to Chicago than they did formerly. It is likely that a high cost of credit in Detroit (probably to a somewhat less extent in Cleveland) is due to the great specialization of industry; the large firms do not depend upon local banking facilities, and the majority of all loans are in relatively small units.[86] In general, banking centers in the West (Pacific Coast and southwest and northwest) remain the high-rate markets. It is found that the third quartile place from 1919 to 1925 was always occupied by such a city.[87]

The more mature a banking center has become, the longer the period during which close bank-customer relationships have been built up, the greater the number of contacts of its banks with those of an expanding region tributary to it, the greater the specialization between the banks themselves (and this is conditioned by the aggregate volume of business), the greater the extent to which open-money markets have developed within the center, and the more diversified trade and industry within the market, the lower the rate level becomes. These and similar factors for long have been effective in the local money market and at times so cumulatively, it seems, that the decades of the 1870's, 1890's, and the 1920's stand as landmarks in the evolution of its money rates.

[86] See Woodworth, *op. cit.*, chap. xi.

[87] See Riefler, *op. cit.*, p. 96.

PRICE MOVEMENTS OF NEWLY LISTED COMMON STOCKS

G. MAXWELL ULE[1]

I. STATEMENT OF OBJECTIVES

THE purpose of this report is to attempt a clarification of the following two problems: (1) What effect the broadening of the market for a security has upon its price movements. (2) In case an effect upon price movements of stocks can be demonstrated, to attempt to discover whether brokers and speculators have discounted this price-making influence before the securities are formally traded on the national exchanges.

For purposes of this exposition, the concept of price movements as used here includes the rate of change of prices of these newly traded stocks in comparison to the rate of change incident to their over-the-counter trading history. This rate of change in both cases is to be based on a comparison of the movements of individual issues to the movements of the industrial averages of the New York Stock Exchange during identical periods. Besides this denotation of the rate of change of prices, a further interpretation read into the foregoing phrase is the direction of the change of prices of these newly traded stocks. The intent of this second construction is to attempt some inference as to the degree to which the prices of the stocks here considered move in consonance with, or in opposition to, the stock price movements of the industry group with which they are logically associated. A terse summation of the two facets of the concept of price movements follows: the first part of the definition concerns itself with the amplitude of the price changes of these stocks; the second part with the direction of the price changes in comparison to the average movements of the prices of the securities in the industry to which each stock belongs.

[1] Mr. Ule was a graduate student in the School of Business when this report was prepared.

The second problem with which this report is concerned, upon cursory survey, presents the appearance of a logical contradiction. In the event that a price-raising influence can be determined after trading upon the exchanges, then, of course, the speculators and brokers have not discounted this effect in advance. The price rise would take place after the issue has been formally traded on the boards, and the answer would immediately be that the brokers and speculators do not discount the price-making influence of a broadened market until the issue is actually on the exchanges.

In this study, however, the locus of the second problem is concentrated entirely on the over-the-counter history of each stock. It will be the purpose of this phase of the investigation to attempt some clarification of the price movements of newly traded issues during the period immediately prior to their listing. From the collective behavior of these issues for this time, an attempt will be made to generalize on the behavior of the speculative community toward issues which are to be newly traded on the exchanges. Upward price movements of these stocks (at a rate much in excess of the movement of prices of the industry to which they belong) during the period prior to trading on the exchanges will be considered ample demonstration of a positive price-making influence due to a broadening of the market for the securities. This more-than-average upward price movement on the over-the-counter market will also be accepted as circumstantial evidence of the actions of speculators with respect to these securities. Further, if on balance between upward and downward movements, the over-the-counter securities appear to have gained more, or lost less, than have their associated Stock Exchange indexes, it would not be unreasonable to assume that this was primarily due to the speculative discounting of the effect of listing upon the future price levels of these issues.

CHOICE OF THE FUNDAMENTAL DATA FOR THE INVESTIGATION

This study, as restricted, covers only those common-stock issues which, after a history upon the over-the-counter markets, were given listing privileges upon either the New York Stock Exchange or the New York Curb Exchange. Several reasons

prompted the choice of these exchanges in limiting the scope of the study. In the first place, the combined sales of the two large New York exchanges represent an overwhelming majority, both in money sales and volume of transactions, of all the common stocks formally traded on the exchanges of this country. This fact alone assures that the choice of exchanges is thoroughly representative. A second factor which prompted selection of the foregoing exchanges was that data on listings and over-the-counter history of securities which have been given listing privileges are abundant in comparison with factual materials available for stocks listed elsewhere. This fact materially simplified the problem of gathering over-the-counter quotations.

The period extending from January 2, 1934, through April 1, 1937, limits the temporal extent of this investigation. This length of time through a major bull movement has several elements which recommend it. Listings have been numerous, thus providing adequate raw data relevant to the problems which are posed herein. Another favorable element resides in the fact that the beginning of the period is not too remote, thus simplifying the gathering of data. It is notorious that over-the-counter quotations on any large scale for a period some years back are extremely difficult to obtain. Limitation of the temporal extent of this study eliminated a major difficulty. On the near side of the picture, April 1, 1937, as a stopping point permits the consideration of issues recently listed, but also allows for some months of trading experience on the exchanges, thus making these issues eligible for study.

Thus far, the choice of exchanges and time period to be used in studying price movements has narrowed the unknowns to a selection of the stock issues. All common stocks which have been newly traded upon either of these exchanges during the period from January 2, 1934, to April 1, 1937, are eligible for consideration. A communication from the executive secretary of the New York Stock Exchange to the author revealed that, of the issues given trading privileges during this period, twenty-two would qualify. A similar statement from the secretary of the New York

Curb Exchange placed the number of common stocks eligible for consideration at seventy-three.

The total of ninety-five issues eligible for study is made up of common-stock issues, which prior to listing on either of the two exchanges have had only over-the-counter trading experience. As the purpose of this article is to study the price movements of issues newly traded on the exchanges, securities which have been given trading privileges on the New York exchanges during this period but which have been shifted from smaller ones were automatically eliminated.

But the problem of choice of issues did not end with the elimination of stocks which have been moved from other exchanges. Analysis of these ninety-five eligible issues, by a study of their corporate history, revealed that many which had passed the first test would not be satisfactory upon further survey. A few of the issues were eliminated because prior to listing they had had no over-the-counter trading history. This arose out of the fact that some of the newly listed securities belonged to companies which were newly organized, or because, prior to listing, some of the corporations' securities were closely held, thus preventing the development of an active over-the-counter market.

One other factor entered into considering the eligibility of a stock issue. This factor was the action of syndicates and underwriters offering new issues of securities of companies which were given trading privileges on the exchanges, but the price of whose securities in the over-the-counter market was definitely artificial and stabilized. Such issues were deemed unsatisfactory for study. In other instances the underwriter offered new securities at the market price. These issues were considered in this study.

Upon submitting each of the ninety-five issues to scrutiny, it was found that sixty securities answered to the specifications drafted for them. These specifications were: (1) The issue had to be given trading privileges during the period from January 2, 1934, to April 1, 1937. (2) The issue must have had no exchange trading experience prior to listing on either of the two NewYork exchanges. (3) The issue must have had a relatively free over-the-counter market prior to listing. This meant that it could not

have been in syndicate for some months prior to trading on the exchanges.

Of these sixty issues, twenty-nine were finally selected as the basis from which generalizations were to be drawn. This group was selected from the larger number by the mechanical process of picking alternate names from an alphabetically arranged list. The twenty-nine securities have their present listing divided as follows: New York Stock Exchange, five issues; New York Curb Exchange, twenty-four issues. The reason why the Curb is so heavily represented is because the New York Stock Exchange seldom takes on issues from the over-the-counter market, but rather accepts its stocks from lesser boards after a period of seasoning thereon.[2]

The date of the original trading upon an exchange was determined for each of the issues selected; and for purposes of comparison with the performance of other stocks listed upon the exchanges, each issue was classified into that industrial or trade group under which it most logically subsumed.

A word in clarification of the industrial classification is relevant. Industrials have been demarked into the same groups as those used by the New York Stock Exchange in its monthly *Stock Exchange Bulletin*. Each of the twenty-nine common stocks was allocated to its group on the basis of inspection. Thus, Wentworth Manufacturing Company, which specializes in the manufacture of women's dresses and women's ready to wear, was placed in the industrial classification known as garments. Similarly, Gar Wood Industries, which manufactures mostly in the auto truck body and accessory group, was placed in the New York Stock Exchange auto parts and accessories group. The remainder of the issues was likewise classified.

[2] The following is the list of common-stock issues studied: American Airlines, American Seal-Kap Co., Augustora Wupperman, Bardstown Distillery, Bell Aircraft, Bon Ami "B," J. W. Carter Co., Consolidated Gas Utilities Corp., Diamond T Motor Car Co., Duro Test Corp., Gar Wood Industries, General Telephone Corp., General Time Instrument, Hearn Dept. Stores, F. L. Jacobs Co., Locke Steel Chain Co., Metal Textile Co., Mueller Brass Co., Mid-West Oil Co., National Oil Products Co., Oldtyme Distillers, Oklahoma Natural Gas Co., Plough Inc., Ryerson & Haynes, Simmons Hardware and Paint, Sterling Aluminum Products, K. Taylor Co., Transcontinental Western Co., Wentworth Mfg. Co.

The reason the New York Stock Exchange classification was adopted was because the New York Stock Exchange publishes monthly the movement of the average prices of stocks in each group. By using these industrial groups as a basis for comparing the actions of the stocks studied, a large amount of time for the compilation of average indexes was saved. These average prices are given in absolute amounts for the end of each month, and a comparison of these month-to-month prices in each group gives some evidence of the trend of the average performance of a share of that particular industry as represented by the issues upon the New York Stock Exchange.

With the date of actual trading known for each issue, monthly closing prices were taken for a period before and after listing. The length of time for which these closing prices was taken depended upon the availability of this information. In some cases over-the-counter prices were available for only three months prior to listing, in others they were available for a much longer period. Wherever it was possible over-the-counter bid prices were compiled on a monthly closing basis for six months prior to trading on the exchanges, though, in other cases, prices for three months prior to listing were taken because no more data were available. Similarly, it was attempted to compile a six-month range of prices for the periods after listing, but here again, when some of the issues were listed as recently as March, 1937, it is obvious that six months' quotations were not available.

Once the monthly closing prices of each stock were gathered for a period both before and after listing, by reference to the *New York Stock Exchange Bulletin*, the monthly closing prices of the industrial group average for the same interval was compiled. These were to be used as a basis of comparison against the price movements of the individual issues.

The purpose of this procedure was to show the price fluctuations from month to month before and after listing. But the monthly movement of prices without some comparison with the movements of month-to-month prices of the industry to which each stock issue belongs would have no value in helping to clarify the central problem—the effect of listing upon the price move-

ments of individual securities. It is imperative that the price movements of each issue before and after listing on the exchanges be compared with the price movements of the industry to which it belongs. The crucial point is that in the general industrial price index we are given the monthly average prices, which are, if we may use the idiom, fabricated on the exchanges by the actions of buyers and sellers. These average price movements of the industries show broadly the technical and long-term movements of prices which are a product of current market conditions and long-term outlook. In contrast to the situation of the industrial price averages, for the individual issues prior to listing, we have the over-the-counter prices and their monthly movements. It is necessary to study these over-the-counter monthly price movements of the individual stocks and compare them to the price movements of the industrial averages during the same period. This would give us a basis for generalization on the relative behavior of over-the-counter securities in comparison to listed securities; also their behavior before and after listing, with the general averages used as a base of reference and comparison.

It is true that the industrial averages of the New York Stock Exchange give no better than average results—a fictitious mean which may have no counterpart in actuality, but the important point is that, by and large, the long-range and technical short-term market influences have their effect upon each issue. The net result is that the monthly average prices of the industrial groups in the *New York Stock Exchange Bulletin* do show the swings of market optimism and pessimism, and these movements may be construed as the price-making influences of the exchanges. The average price movement on the exchanges compared with the individual price movements in the over-the-counter market should throw some light on the movement of over-the-counter prices in contrast to listed prices when all these securities are subject to the same economic, political, and psychological influences. Similarly, comparison with the averages of the performance of these individual issues after listing can show the relative rate of movement before and after listing, with the averages as a base in both instances.

To determine the relative month-to-month price movements of the general indexes, and also of the individual issues, the following method of link relative construction was determined upon: the absolute month-to-month prices were taken as data and the price change from one month to another was determined for each issue.

TABLE 1

MONTHLY CLOSING PRICES IN ABSOLUTES (1936)

Issue	April	May	June	July	August
F. L. Jacobs Co.	17⅞	15⅞	14⅞	16¾	14¾
Relative per cent change from previous month	− 4.1	−10.0	− 4.8	+12.75	−12.1

This absolute price change was used as the numerator of a fraction for which the denominator was the absolute price for the preceding month. Division of the denominator into the numerator for each month gave the relative price change of each security and industrial average for the month. A small section of the absolute price movements of one of the stocks converted into this link relative month-to-month price change illustrates the method (see Table 1).

For comparison the automobile parts and accessories general index, under which F. L. Jacobs Company is classified, is shown in Table 2 for the same period.

TABLE 2

MONTHLY CLOSING PRICES IN ABSOLUTES (1936)

Index	April	May	June	July	August
Auto parts and accessories	28.38	30.06	29.70	31.78	31.87
Per cent change from previous month	−14.6	+ 5.9	− 1.2	+ 7.0	− 0.6

A review of these two series of percentages shows the following facts:

During the month of April, while the price of F. L. Jacobs stock fell to 4.1 per cent lower than at the close of the previous month, the average price change of the auto-parts securities listed

on the New York Stock Exchange during the same month showed a drop of 14.6 per cent. Thus, for this one-month period, the individual issue moved downward only 28 per cent as rapidly as the general average.

During the month of May, the trend of prices for the Jacobs stock and the average for the industry showed divergent trends. While the Jacobs stock dropped 10 per cent from the closing price of the preceding month, the average actually closed 5.9 per cent higher.

In June both the individual issue and the average showed a slump in prices from the May closing figures. Thus, Jacobs lost 4.8 per cent from the past month and the average lost 1.2 per cent. During this month the Jacobs stock moved, in terms of relatives, four times as rapidly as the average. One point of caution is in order at this juncture. While the two price movements were in the same direction during this month, it is evident that the June drop in Jacobs came on top of a large drop in May. On the contrary, the average showed a drop in June, which drop may be considered as a reaction from a rise during May. However, for our purposes, this is no serious difficulty. The opposite tendency takes place often enough to cancel out any bias that may arise. That is, the general indexes move down in successive months while the individual issues move down only for one month, often enough to balance the opposite tendency. Further, it is not particularly significant to know that for a period of six months the two price series show positive changes of a certain magnitude. It is more desirable to show how the two series acted from month to month during this period, hoping in this manner to segregate the price changes from month to month and on this basis making general conclusions.

For July the Jacobs stock shows that it moved 182 per cent as fast as the auto-parts index.

During August, while the averages held almost constant, the Jacobs securities showed a drop in value from July of 12.1 per cent, showing a divergent tendency for the month.

A tabular summary of the price movements of the Jacobs stock and the auto-parts average during this period is shown in Table 3.

This process of month-to-month comparison was carried through for each of the twenty-nine issues. However, it was deemed necessary to divide this study into two parts—the study of monthly price movements before the stocks were traded on the exchanges and a study of the monthly price movements after they were listed. By this method it was hoped that any variation in price movements would assert itself in the percentage changes. This tendency being thus fixed in mathematical terms could then be studied further.

TABLE 3

PERCENTAGE MONTH-TO-MONTH CHANGES OF SECURITIES WITH PRECEDING MONTH PRICE AS A BASE

	April	May	June	July	August
Auto-parts and accessories index	−14.6	+ 5.9	− 1.2	+ 7.0	+ 0.6
F. L. Jacobs Co. index	− 4.1	−10.0	− 4.8	+12.75	−12.1
Relative price change average into individual stock	28	.....	400	182	.....

The divergent price changes for the periods before and after listing were also segregated and subjected to further scrutiny. The divergent tendencies for each period were separated into two classes:

1. Those where the average price change was positive for the month and the price change for the individual issue was negative.

2. Those where the average price change was negative for the month and the price change for the individual issue was positive.

The purpose behind this segregation was to make it easier to arrive at a generalization on the behavior during periods of price divergences.

OVER-THE-COUNTER PERFORMANCE OF INDIVIDUAL SECURITIES IN COMPARISON TO THE GENERAL AVERAGES

Price movements when both series are moving upward.—The over-the-counter period of study covers price movements of the 29 stocks for 109 months. During these month periods there were 41 cases when both the individual issues and the general indexes moved upward, and 11 cases during which the general indexes

moved upward but the individual indexes made no change. Table 4 indicates the rate of movement of the general indexes during

TABLE 4

RATE OF MOVEMENT OF GENERAL INDEXES WHEN BOTH SERIES ARE MOVING UPWARD

Per Cent Change from Previous Month	Frequency in Months
1 to 5	30
5 to 10	19
10 to 15	2
15 to 20	0
20 to 25	1

these 53 intervals. When both series were moving upward, 96 per cent of the movement of the general indexes occurred in a range of 1 to 10 per cent increase over the previous month's figure. For the averages, the mean figure for month-to-month price increase was 5 per cent during these periods.

TABLE 5

RATE OF MOVEMENT OF INDIVIDUAL ISSUES COMPARED TO RATE OF MOVEMENT OF GENERAL INDEXES UNDER WHICH EACH IS CLASSIFIED, WITH RATE OF MOVEMENT OF GENERAL INDEXES USED AS THE BASE

Rate of Movement Compared to Base	Frequency in Months
No movement	11
Less than 1 time as fast	6
1 to 2 times as fast	10
2 to 3 times as fast	4
3 to 4 times as fast	5
4 to 5 times as fast	6
5 to 6 times as fast	3
6 to 7 times as fast	1
9 to 10 times as fast	1
10 to 15 times as fast	1
15 to 20 times as fast	4

The movement of prices of the individual indexes during the same period in comparison to the movements of the general indexes is displayed in Table 5. The mean figure for the rate of movement of the individual issues over the rate of movement of the averages is 2.9 times. Thus, with the mean value of the posi-

tive price changes of the industrial indexes placed at 5 per cent over the preceding month, the movement of the individual issues from their previous month's base would be 2.9 times as fast, or 14.5 per cent increase from their previous month's price.

Comparison of price movements when both indexes and individual issues are moving downward.—Of the 109 monthly periods of over-the-counter trading, for 16 months or 14.7 per cent of the time,

TABLE 6

RATE OF MOVEMENT OF GENERAL INDEXES WHEN BOTH SERIES ARE MOVING DOWNWARD

Per Cent Negative Change from Previous Month	Frequency in Months
1 to 5	7
5 to 10	5
10 to 15	4

both series were moving downward. During this period, the price fluctuations of the industrial indexes from month to month were distributed in the pattern displayed in Table 6. The mean value of negative changes for the general indexes when both series move downward is 6.5 per cent. Thus, when both series move nega-

TABLE 7

RATE OF MOVEMENT OF INDIVIDUAL SERIES WHEN BOTH SERIES ARE MOVING DOWNWARD, WITH RATE OF MOVEMENT OF GENERAL INDEXES AS THE BASE

Rate of Movement Compared to Base	Frequency in Months
Less than 1 time as fast	7
1 to 2 times as fast	6
2 to 3 times as fast	1
3 to 4 times as fast	2

tively, the rate of change of the general index from the previous month is 6.5 per cent.

Table 7 shows the rate of movement of the individual series when both series are moving downward. Calculation of the mean value shows that during these periods the individual issues move downward at an average rate of speed $1\frac{3}{8}$ times faster than the general indexes. With the general indexes moving down at the rate of 6.5 per cent, the rate for the individual issues is 8.9 per

cent from their previous month's closing price. By scanning the rates of movements during the upswings and downswings of prices, it is observable that when both movements are upward the rate of increase of prices of the individual issue is much more rapid than is the rate of decrease when both series are moving down. It appears, thus, that the securities which are destined for the exchanges, during 60 per cent of their later over-the-counter history move more rapidly than do similar securities on the exchanges. This volatility is evident on a minor bull phase and also on a minor bear phase of the market. Thus, in 47.7 per cent of the time, both the individual securities and the general indexes were bullish in tendency, but the individual issues appeared to move faster from month to month by 2.9 times than did the general averages.

TABLE 8

POSITIVE PERCENTAGE PRICE MOVEMENT OF GENERAL AVERAGES WHEN INDIVIDUAL ISSUES MOVED DOWNWARD

Per Cent Positive Change from Previous Month	Frequency in Months
1 to 5	13
5 to 10	5
10 to 15	1
15 to 20	1

On the bear tacks it appears that the individual issues again moved faster than the averages, but in this case at a rate only $1\frac{3}{5}$ times as fast as the averages. It would seem that the individual over-the-counter securities are more volatile than the averages, but that the volatility is more pronounced on the bull side than on the bear side. This generalization holds true only when both series move in the same direction.

Analysis of price movements when indexes are moving upward and individual issues are moving downward.—The distribution in Table 8 shows the classification of positive price changes from month to month taking place in the general averages when the quotations for individual issues diverged from this movement. The mean figure for price appreciation from the previous month's base for the averages considered under this heading is 6.25 per cent.

While the averages were moving upward the divergent downward trend of the individual issues took on the configuration shown in Table 9.

The mean figure for negative price changes in this classification is 6.5 per cent from the previous month's base when the general index is moving upward. With this behavior evident during 20 months of the 109 in the total study, the following generalization seems safe: That in 18.3 per cent of the over-the-counter history of this sample, the general indexes showed a net positive price change from month to month of 6.25 per cent, during which period the individual issues showed a negative month-to-month change

TABLE 9

RATE OF NEGATIVE CHANGE IN INDIVIDUAL STOCK PRICES WHEN AVERAGES ARE GOING UP, WITH PREVIOUS MONTH'S INDIVIDUAL STOCK PRICES USED AS THE BASE

Per Cent Negative Change from Previous Month	Frequency in Months
1 to 5	11
5 to 10	5
10 to 15	2
15 to 20	1
20 and over	1

of 6.5 per cent, using their own prices as a base. For 1 per cent upward movement of the general averages, the individual issues moved down 1.04 per cent from their previous month's figure.

Analysis of price movements when indexes are moving downward and individual issues are moving upward.—This type of price divergence between the general averages and the individual securities occurs in 21 out of the 109 months of the sample. Of the monthly periods, 19.7 per cent fall in this classification.

Expressed in terms of averages, during these periods the general index dropped 4 per cent per month from the previous month's price, while the individual issues moved upward.

The arithmetic mean of the price increases of the individual issues for those month units is 19.5 per cent over the price in the preceding month. During these periods, when the general indexes moved down at a rate of 4.8 per cent per month from the previous month's price, the individual securities showed a price apprecia-

tion per month from their previous month's price of 19.5 per cent. Thus, for 20 per cent of the over-the-counter history studied, while the general prices were declining at the rate of 4.8 per cent per month, the individual issues were realizing price appreciations which, if the trend continued, would double their value in less than four months.

MONTH-TO-MONTH MARKET PERFORMANCE OF THE INDIVIDUAL ISSUES AFTER LISTING, IN COMPARISON TO THE GENERAL AVERAGES

The tabular distribution of frequencies and class intervals of percentage price changes are not reproduced in this portion of the investigation. Methods of breakdown and analysis of these data are identical with those used for the over-the-counter portion of the problem. In the interest of brevity the emphasis is more properly placed upon an enumeration and evaluation of the statistical results obtained from these data.

It is proposed to approach the exchange history of the common-stock issues in this sample by the same methods which were availed of in the over-the-counter study.

Comparison of price movements when both index and individual issues are moving upward.—One hundred thirty-one months of price movements after listing on either of the two New York exchanges are the basis of this segment of the study. During 40 of these months, or 30.7 per cent of the time, both the general indexes and the individual prices moved upward. The mean percentage change of the general average over their previous month's base is 6 per cent for the entire 40 months.

While the averages were performing thus, the individual issues moved 4.25 times as fast as the industrial averages. With the industrial averages moving at a rate of 6 per cent positively from the previous month as a base, the individual securities showed a movement of about 25.5 per cent on an average from their own previous month's figures.

Comparison of price movements when both indexes and individual issues are moving downward.—For 51 out of the total of 131 months of exchange trading, both the general averages and the

individual issues showed a decrease in price from the preceding month's figures. Expressed in terms of percentages, 39 per cent of the stock-exchange listing period studied shows a simultaneous bearish movement for both individual issues and general averages. The average movement of the industrial indexes for this period showed a decline from the previous month's price of 5.8 per cent.

While the averages were showing this rate of change, the individual issues traveled downward at a rate 2.75 times faster than the averages. With the averages showing a downward tendency of 5.8 per cent per month, the individual issues, on the average, showed a movement of 16 per cent downward from their own previous month's figure. It is evident that the individual issues were more sensitive to bearish action than the averages themselves. This could be due to several reasons. The fact that they were as yet unseasoned members of the exchange group may have made them more unattractive to speculators during bearish movements. Such attitudes on the part of speculators could result in fairly large sags in the price movements of these issues during periods of general decline. Another reason is that, in general, the prices of the newly traded securities are relatively lower than are the prices of the industrial averages. This, in itself, would tend to make these stocks move more rapidly percentage-wise in either direction on the advent of the appropriate market sentiment.

Analysis of movements when general indexes are moving upward and individual issues are moving downward.—This situation occurred in 29 out of the 131 months of listing, or approximately 21 per cent of the time. During these periods the general indexes showed a positive price change from the preceding month of 5.6 per cent on an average.

While the industrial indexes were tending upward, the individual issues moved downward at the rate of 8.75 per cent from the previous month's individual price as a base. In comparison with the equivalent behavior on the over-the-counter markets, it appears that, while the general indexes during the listing phase showed a monthly price appreciation 14 per cent less than did the general indexes when considered for the over-the-counter

tion per month from their previous month's price of 19.5 per cent. Thus, for 20 per cent of the over-the-counter history studied, while the general prices were declining at the rate of 4.8 per cent per month, the individual issues were realizing price appreciations which, if the trend continued, would double their value in less than four months.

MONTH-TO-MONTH MARKET PERFORMANCE OF THE INDIVIDUAL ISSUES AFTER LISTING, IN COMPARISON TO THE GENERAL AVERAGES

The tabular distribution of frequencies and class intervals of percentage price changes are not reproduced in this portion of the investigation. Methods of breakdown and analysis of these data are identical with those used for the over-the-counter portion of the problem. In the interest of brevity the emphasis is more properly placed upon an enumeration and evaluation of the statistical results obtained from these data.

It is proposed to approach the exchange history of the common-stock issues in this sample by the same methods which were availed of in the over-the-counter study.

Comparison of price movements when both index and individual issues are moving upward.—One hundred thirty-one months of price movements after listing on either of the two New York exchanges are the basis of this segment of the study. During 40 of these months, or 30.7 per cent of the time, both the general indexes and the individual prices moved upward. The mean percentage change of the general average over their previous month's base is 6 per cent for the entire 40 months.

While the averages were performing thus, the individual issues moved 4.25 times as fast as the industrial averages. With the industrial averages moving at a rate of 6 per cent positively from the previous month as a base, the individual securities showed a movement of about 25.5 per cent on an average from their own previous month's figures.

Comparison of price movements when both indexes and individual issues are moving downward.—For 51 out of the total of 131 months of exchange trading, both the general averages and the

individual issues showed a decrease in price from the preceding month's figures. Expressed in terms of percentages, 39 per cent of the stock-exchange listing period studied shows a simultaneous bearish movement for both individual issues and general averages. The average movement of the industrial indexes for this period showed a decline from the previous month's price of 5.8 per cent.

While the averages were showing this rate of change, the individual issues traveled downward at a rate 2.75 times faster than the averages. With the averages showing a downward tendency of 5.8 per cent per month, the individual issues, on the average, showed a movement of 16 per cent downward from their own previous month's figure. It is evident that the individual issues were more sensitive to bearish action than the averages themselves. This could be due to several reasons. The fact that they were as yet unseasoned members of the exchange group may have made them more unattractive to speculators during bearish movements. Such attitudes on the part of speculators could result in fairly large sags in the price movements of these issues during periods of general decline. Another reason is that, in general, the prices of the newly traded securities are relatively lower than are the prices of the industrial averages. This, in itself, would tend to make these stocks move more rapidly percentagewise in either direction on the advent of the appropriate market sentiment.

Analysis of movements when general indexes are moving upward and individual issues are moving downward.—This situation occurred in 29 out of the 131 months of listing, or approximately 21 per cent of the time. During these periods the general indexes showed a positive price change from the preceding month of 5.6 per cent on an average.

While the industrial indexes were tending upward, the individual issues moved downward at the rate of 8.75 per cent from the previous month's individual price as a base. In comparison with the equivalent behavior on the over-the-counter markets, it appears that, while the general indexes during the listing phase showed a monthly price appreciation 14 per cent less than did the general indexes when considered for the over-the-counter

period, the individual issues showed wider movements. During the over-the-counter phase, the individual issues showed a month-to-month sag of 6.5 per cent. For the period after listing, these same securities showed a price decline from month to month of 8.75 per cent, or 34.6 per cent more than before listing. Thus, while the averages for the listed period showed a month-to-month price increase 14 per cent less than they showed during the similar unlisted period, the individual issues moved downward 2.5 times as rapidly. It would appear that the listing of stocks made them more volatile downward during a period when the averages were moving upward and the individual prices were diverging from the averages. This statement would hold true in a comparison of action before and after listing, with the averages as the basis of comparison in both cases.

Analysis of price movements when indexes are moving downward and individual issues are moving upward.—This type of divergence occurred in 13 out of the 131 months, or for about 9.9 per cent of the listed period studied. The computed arithmetic mean shows that the industrial indexes had an average downward movement during these months of 4.1 per cent from the previous month's figure.

The positive appreciation of the individual issues during these months equaled an average monthly rise over their previous month's closing price of 10.2 per cent. During the listed period of this study it appears that when the general indexes moved downward with the individual issues taking an opposite direction, the rate of movement expressed in terms of percentage change from previous month's prices for each class is this: The general indexes show an average downward change of 4.1 per cent per month during these periods, while the individual issues move upward at the rate of 10.2 per cent from their previous month's base. Compared with the similar occurrences in the over-the-counter period, the general indexes dropped only 85 per cent as rapidly as they did during the over-the-counter period. The individual issues during these intervals acted thus: over-the-counter period, 19.5 per cent per month appreciation; listed period, 10.2 per cent per month appreciation.

Patently, while the general indexes dropped more slowly by 15 per cent during the after-listing period than they did for the over-the-counter interval, the individual issues moved forward at a rate only 53 per cent as rapidly as did these same issues while traded over the counter. If the configuration between these periods of divergence is figured on the basis of over-the-counter market as a datum, then the rate of appreciation of the individual issues when the general indexes moved downward was 163 per cent greater during the over-the-counter phase than after listing.[3] The inference to be drawn from these figures is that, after listing, the individual securities moved more slowly in opposition to the general indexes. It would appear that listing of securities conditions their behavior to follow the general averages more closely than they did in their over-the-counter days. This is particularly true during periods of price divergence.

GENERALIZATIONS AND CONCLUSIONS

The purpose of this unit of the study is to present in summary fashion provisional answers to the problems stated at the beginning. A statement of the effect of the broadening of the market will be outlined in two divisions.

1. Generalizations will be presented summarizing the rate of price changes from month to month before and after listing. On the basis of these facts it is proposed to answer the query of how price movements of stocks after listing compare to movements of the same issues while they are being traded over-the-counter.

2. An attempt will be made to compare the general consonance of price movements before and after listing with the industrial averages for like periods of time.

Inferences will also be drawn on the actions of brokers and

[3] During the over-the-counter phase of divergence the general indexes moved downward 4.8 per cent per month from the previous month as a base, while the individual issues moved up 19.5 per cent per month during these periods. For a 1 per cent price fall of the averages, the individual issues moved up 4.07 per cent.

For the listed period, the general indexes moved down 4.1 per cent per month, while the individual issues moved up 10.2 per cent. In this period for a 1 per cent fall of the general indexes, the individual issues rose 2.5 per cent. Thus, dividing 4.07 by 2.5 gives the percentage by which the individual issues over-the-counter out-performed the issues during the listed phase. This equals 163 per cent.

speculators toward these newly listed stocks during the over-the-counter period immediately preceding listing.

EFFECT OF BROADENING OF MARKET UPON PRICE MOVEMENTS

For the period when both the general indexes and the individual issues moved upward, the general averages during the listed phase moved upward from their previous month's base on an average of 20 per cent farther than they did during the over-the-counter phases. While the averages behaved in this manner, the individual issues for the listed period moved on average 146 per cent higher than they did in their over-the-counter phase. This percentage change is figured in each case on the basis of individual performance compared to performance of the averages for the same period. Thus, during the over-the-counter period, the individual issues moved upward 2.9 times as far as the averages. For the after-listing period, the individual issues out-performed the averages by 4.25 times. The individual issues moved farther during the listed period than they did in the over-the-counter period by the ratio of $4.25 \div 2.9$, or 146 per cent. It appears that listing on the exchanges has tended to produce a higher price rise for the individual securities as compared to their performance before listing.

Similarly, when both the general indexes and the individual issues were moving downward, the individual issues after listing were more volatile than before listing. During this phase the industrial indexes fell only 0.9 as rapidly for the listed period as they did during the over-the-counter period. But the individual issues showed a month-to-month decline which was 196 per cent greater than during the over-the-counter history of the individual securities.[4] The evidence points rather definitely to the fact that listing has added to the volatility of the price movements of these securities. For the listed phase of this study, the indexes and the individual issues move upward together 30.5 per cent of the time;

[4] Prior to listing the individual issues moved down 1.4 times as rapidly as the averages. After listing they moved down 2.75 times as rapidly as the averages. The increase in the fall of the individual issues after listing as compared to before listing is $2.75 \div 1.4$, or 196 per cent.

downward, 38.9 per cent. Thus, for 69.4 per cent of the listing period the individual issues have demonstrated that they move upward and downward from month to month about 1.74 times as far as they did during their over-the-counter history.[5]

When the indexes diverge, with the industrial index rising and the individual ones falling, another interesting relationship arises. Compared to their action during the over-the-counter phase, the general indexes for the listing period moved upward only 0.9 as far on a month-to-month basis. But while the general indexes during these months failed to rise as far as they did during the over-the-counter period, the individual issues fell 40 per cent farther during the listing phase from their previous month's closing than they fell when traded over-the-counter. The averages failed by 10 per cent to equal their month-to-month rise, but the individual issues exceeded their previous actions by 40 per cent from month to month. If the same movement for the individual issues was maintained for the listing period as was maintained during the over-the-counter months, then, with the general averages failing to reach their over-the-counter price changes by 10 per cent, the individual issues should not have fallen more than to 89.5 per cent of their performance on the over-the-counter phase.[6] It appears that, when the indexes diverge, with the gen-

[5] This figure is the weighted arithmetic mean of the increase and decrease of movement after listing as compared to before listing.

Movement upward after listing compared to movement upward before listing, 146 per cent greater.

Movement downward after listing compared to movement downward before listing, 196 per cent greater.

Movement upward occurred 30.5 per cent of the time.

Movement downward occurred 38.9 per cent of the time.

Thus:
$$\begin{aligned} 146 \times 30.5 &= 4453.0 \\ 196 \times 38.9 &= 7624.4 \\ \hline 69.4 & \quad 11177.4 \end{aligned}$$
$$1277.4 \div 69.4 = 174$$

[6] During the over-the-counter period a 1 per cent rise in the general indexes is associated with a 1.04 per cent fall in the individual issues. For the listed phase the general indexes rose on average 5.6 per cent over previous month's base. If the over-the-counter ratio held, then the individual issues should have fallen 5.6×1.04, or 3.82 per cent. A 5.82 per cent estimated fall is equal to 89.5 per cent of the fall for the over-the-counter period.

eral averages going upward, listing of the individual securities is accompanied by downward movement of 50.5 per cent greater amplitude than when these issues were on the over-the-counter market.[7] During these divergent phases the individual issues moved more volatilely and farther downward than they did during similar months on over-the-counter trading. This configuration occurred for 21 per cent of the listed period.

For the remaining 9.9 per cent of the listed period, when the general averages moved downward and the individual issues upward, the following tendencies prevailed: the averages from a month-to-month basis fell only 85 per cent as far as they did during the over-the-counter period. But, while the averages were more resistant to depressing influences, the individual issues rose only 64 per cent as high as they did for the same periods during the over-the-counter trading history.[8] It appears that, for these periods, listing upon the exchanges has made the individual issues more vulnerable to unfavorable market sentiment than they were while sold over-the-counter.

In summation, the effect of the broadening of the market upon the price movements of individual securities appears to fall into two categories. The first category relates to the periods when the indexes move in consonance. During general bullish sentiment, the individual issues move upward farther than they did during similar periods of over-the-counter trading. The average increase from a month-to-month basis is 146 per cent over similar movements before listing, figuring the increase from the averages as a base in both periods. When the general outlook is bearish, the

[7] This figure is obtained by adding 10.5 per cent, which is the amount by which the individual issues failed to perform in consonance with the over-the-counter period if the averages rose 6.5 per cent, and the 40 per cent by which they fell farther than during the over-the-counter period.

[8] If we assume the rates of divergence in the over-the-counter market as the datum, then the individual issues rose 3.85 per cent from previous month's figure for every 1 per cent fall of the general averages. After listing, for this phase, the averages fell 4.1 per cent. If the same rate of divergence were to be applied to this period, as was applied to the prelisting period, the individual issues should have risen 15.8 per cent. Actually, they rose only 10.2 per cent or 64 per cent of this assumed normal pattern.

individual issues moved downward 1.96 times as fast as they did during the over-the-counter period. This estimate is also figured from the averages as a datum.

The second category concerns itself with the effect of the broadening of the market upon security prices during periods of price divergence. During these periods of divergence, for the listed phases, the individual securities fell farther than they did in the over-the-counter market. And, when the averages were moving downward, the individual securities failed to move upward as far as they did before listing. Favorable outlook for the individual issues, when the averages were bullish, produced greater price appreciation when the securities were on the exchanges than when they were traded over-the-counter. Unfavorable prospects, when the averages were bearish, produced a larger sag than it did over-the-counter. Favorable prospects, when the averages were moving downward, did not produce as great a price rise for the individual securities as it would have when traded over-the-counter; and unfavorable outlook, when the averages were bullish, produced a larger month-to-month fall in prices than before listing.

Of the 109 months of over-the-counter experience studied here, 62 per cent of the time the month-to-month movements of the individual securities moved in the same general direction as the averages. For 38 per cent of the months the movements of the averages and individual issues diverged.

For the listed phase of 131 months, 69.4 per cent of the time the averages and the individual securities moved together and for 31.6 per cent of the time they diverged. Noticeably, the individual issues seem to be more closely bound to the general market movements after listing than before. For these two periods there is an actual improvement of 12 per cent in the monthly consonance of movements using the over-the-counter experience as a base. But, besides this actual increase in consonance, due to the fact that the rates of divergence of the individual issues from the averages has noticeably decreased for the listed period when compared with the prelisting period, it would be safe to say that listing does hold the movements of the individual issues more

closely to the movements of the averages than during the over-the-counter period.

ACTIONS OF BROKERS AND SPECULATORS TOWARD STOCKS IMMEDIATELY BEFORE LISTING

It appears that the speculative community did react favorably to the knowledge that a security was to be shifted to an exchange from the over-the-counter market. Further than this, it appears that speculators in a measure discounted this knowledge in terms of higher prices for the securities while in the over-the-counter markets. When compared with the averages, these securities moved 2.9 times as rapidly during a bullish swing and moved down only 1.3 times as rapidly during a bearish movement. It would tend to show that, on balance, the prices of over-the-counter securities moved forward during these junctures. When the averages moved downward and individual issues diverged—due, perhaps, to favorable prospects or to pure market psychology—the individual issues showed a positive month-to-month percentage gain of 19.5 per cent. While for the opposite movement, with the averages going up and the individual issues down, the individual issues showed only a 6.5 per cent decrease from month to month.

Definitely, then, for this period the buoyant tendencies of the individual issues were the stronger. The issues far out-performed the averages during the general bullish move, barely outdistanced them during a bearish phase, and on balance, when the indexes diverged, it appears that the upward movements were far stronger than the downward ones. It would not, perhaps, be too much to say that speculators and brokers do discount the price-making influence of a broadened market to some extent prior to actual listing on the exchanges.

It must be remembered, however, that during the listing phase the individual issues out-performed the averages by a greater amount than the over-the-counter issues out-performed the same averages. There was this difference—that even though the individual securities gained more during a bullish movement, they lost more than they had during over-the-counter trading when

the general trends were downward. Further, when the indexes diverged, it appears that on balance the depressing effects were the stronger.

For the period immediately prior to listing, the individual issues moved to a higher level and appeared to hold that level fairly well. After listing, though the individual prices rose higher than they did during the over-the-counter phase, they fell much lower, and during mixed trends seemed to lose more than was lost for the over-the-counter periods. Clearly, after listing, there were wider price movements with relatively lower resistance levels than prior to listing. It may be that the knowledge that the stock was to have listing privileges tended to produce these higher resistance levels below which the individual prices would not move when traded over-the-counter.

MUNICIPAL WATER-UTILITY MANAGEMENT
Continued

E. GROSVENOR PLOWMAN*

MANAGEMENT AT THE CO-ORDINATION LEVEL

WHY A CO-ORDINATION LEVEL?

IF WE think of the public trustees as being always a committee, and the top executive as being always an individual, such generalizations will help to explain what is meant by the co-ordination level of management activity. The weaker the trusteeship activity, the less able it is to perform effectively, and the more the top executive resembles a general of an army, fully responsible and fully authorized. Conversely, strong activity at the trusteeship level shifts the top executive toward co-ordination activities. He serves as the eyes and ears of the trustees; he gives orders in the name of the trustees; he motivates the organization to achieve the objectives laid down by the trustees.

Thus, when the mayor of a city controls the city council, the power of the mayor is enhanced and that of the council reduced. A kind of dictatorship becomes possible under such circumstances. The mayor acquires great authority, at least with respect to the city employees and city departments.

Voluntary associations are commonly governed by an elected or self-appointed board of directors—a management committee. This committee, if the association is large, appoints an executive, commonly given the title of secretary. This executive secretary is responsible to the management committee; he is its representative, and may make decisions in its name, subject to blanket or specific authorizations; he is the eyes and ears of the committee; he motivates the association membership to work together along the lines laid down by the committee, usually lines formulated by himself but accepted and adopted by the committee.

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It is obvious that the secretary of a voluntary association cannot be a general, giving commands and enforcing obedience. He is essentially a co-ordinator, taking the ideas and wishes of the committee and translating them into action; taking to the committee the facts and wishes of their membership, for translation into objectives and policies by the committee. This does not mean that associations cannot have strong and forceful secretaries who do highly creative and original work. It does mean that when such forcefulness leads the secretary into the position of trying to force his committee or his membership to do what they are not yet ready to do, he and the association soon part company. If no other way is available, the membership melts silently away and the financial support disappears.

Because the mayor of a city has his own elected status, separate from the city council management committee, he can drift toward dictatorial control over the city employees and city departments, including the water utility. The city manager, on the other hand, is more like the secretary of a voluntary association. He is the creature of the management committee that appointed him. He derives much of his power as top executive from the management committee, in whose name he speaks. To get things done he must sell his ideas to the management committee. This does not keep him from being forceful, and a great leader and executive. However, like the secretary, he cannot become the general manager in the private business sense without running the risk of losing the support of his management committee and of the community.

This is even more true of the top executive appointed by a water board or a utility-district board, and serving at its pleasure. Such boards are highly specialized in their interest, as is the executive. This greatly increases the range within which the board can exert its powers without delegation. Such boards, in other words, are well equipped to perform the functions of trusteeship management, and, for that very reason, push their top executives toward the duties of co-ordination between top management and operation.

The term "co-ordination" is here used in the sense urged by Urwick, who has stated:

> The additional co-ordination postulated by specialization and the technical authority which accompanies it [may evolve] a new type of official . . . . [and] foreshadows a . . . . true "staff" . . . . in the military sense. . . . . There must be a new kind of authority which is neither "line" . . . . nor technical.[12]

To sum up, a co-ordination level of management activity is necessary in the case of the typical water utility because:

1. The top executive cannot, in general, assume personal power and responsibility, because such "general managership" type of power is incompatible with a strong and effective management committee at the trusteeship level.

2. Without a co-ordination level, there exists no means for bridging the gap between the trustees and the functional specialists and line executives of the operating organization.

3. The management committee, because of the personal limitations of practically unpaid part-time service, cannot personally study the records and reports of the organization, or personally translate general decisions into detailed instructions. The co-ordination level provides a means of assembly of matters for consideration by the management committee, and vice versa.

TYPICAL ORGANIZATION OF THE CO-ORDINATION LEVEL

The organization of the co-ordination level depends, of course, upon the point or points at which co-ordination of operation and trusteeship must take place. Thus, for many years official publications of the city and county of Denver have carried an organization chart. According to this chart there are two kinds of executives, those elected directly by the people and all others. In the elected class were the city councilmen, the mayor, and the city auditor. The chart indicates that the mayor is the executive head of all city activities, other than the city council and the city auditor. Followed literally, the Denver water utility would have no direct dealings with the city attorney, the city treasurer, the city auditor, or the city council, despite the charter amendment giving each of these agencies partial responsibility for water-utility matters. All co-ordination of the water utility with the

[12] L. Urwick, "Axioms of Organization," *Public Administration Magazine*, October, 1935, pp. 344–58, 385–92.

rest of the city government would be, under this plan, through the office of the mayor. With twenty-two distinct departments and agencies of the Denver city government, all heading up to the mayor, it is obvious that the mass of problems calling for co-ordination that would come to the mayor, if this chart were followed literally, would be enormous and far beyond the capacity of one executive to handle. To manage twenty-two separate agencies, large and small, is probably more than any one executive can successfully accomplish, yet that is the task to which the mayor of Denver presumably dedicates his attention. The lack of correspondence of this published organization chart with the actual facts needs no further comment. In fact, the co-ordination level in the Denver water utility has been partly in the person of the mayor and partly the responsibility of the top salaried executive of the water board—the secretary or manager.

According to a Detroit water-utility official statement, "Three officers in operating work report directly to the Board, to wit: The secretary, the auditor, and the superintendent and general manager. . . . . The latter is the executive officer."[13] This makes the general manager the chief co-ordinating executive, with two major assistants.

This Detroit pattern, of having several executives divide the major activities of the water utility, one such executive being also designed as chief co-ordinating or top executive, is very common. It is found at present in San Antonio, Des Moines, Louisville, and Cincinnati, for example. The actual activities thus identified as major departments are, of course, various. In Des Moines the departments are plant operation, handled by the chief executive; and finance and office management, handled together by another executive. In Louisville engineering and plant operation are under the manager; finance and office management have separate heads. In San Antonio plant operation is under the manager; there are both a secretary and an auditor. Cincinnati has office management, water supply, and water distribution, the latter two being the special interest of the water superintendent. Much of

[13] G. H. Fenkell, *A Descriptive Survey* (Detroit: Board of Water Commissioners, October, 1928), p. 4.

the co-ordination level activity is, of course, transferred here to the Cincinnati city manager. A number of top executives of equal rank is found in the East Bay municipal utility district. The treasurer, attorney, secretary-accountant, and the chief engineer all report to the board. The latter is also designated as general manager, but this means chiefly with respect to plant operation, which itself consists of eight subexecutives reporting to him. This arrangement resembles the usual city organization, built up under the mayor and city council.

It is evidently common practice to build up an executive pyramid, much as in private business, headed by a single chief executive, who in most cases is also in direct charge of operation of the water plant. This chief executive is not a true general manager, although often so designated, but is rather a co-ordinator of operation and trusteeship levels.

In many cities the mayor is an essential part of the co-ordination organization. As has been pointed out, it is theoretically and practically possible for the mayor to be part of the trusteeship group; to serve as co-ordinator; and to arrogate to himself the rights and responsibilities of the general manager of a private business. There is no reason why the mayor's relation to the water utility, with respect to different problems, may not cast him in all three roles at the same time. Certainly, as far as the proprietary water utility owned by the municipality is concerned, the mayor's relationship should be simplified and clarified. The mayor cannot be all things to all men, even in management of the water utility.

PERSONNEL AT THE CO-ORDINATION LEVEL

The executive co-ordinating head of the water utility is usually an engineer, but this is not universal, a minority of the executives being recruited from the business-office side. This latter procedure develops especially where there is a strong board, served by an efficient secretary who is also office manager, and is then in line for promotion to the post of chief executive.

Of thirteen water utilities located in major metropolitan cities of the United States, seven include the word "manager" in the

title given to the top executive. Kansas City, having a city manager, calls its water utility head, who reports to the city manager, a "director." Baltimore has placed its water utility under the city engineer, who is appointed by and reports to the mayor. Under the city engineer is a water engineer. The water engineer has under him only plant operation. Billing and collection; accounting; finance; law; personnel; and even purchasing are under other subdivisions of the city, each with a top executive reporting to the mayor and city council. The principal co-ordination level is the mayor himself. The four remaining cities of the sample are divided. Two use the title "chief engineer and superintendent"; two use the title "superintendent."

It has already been pointed out that in water-board and utility-district cities, the co-ordination level tends to be concentrated directly under the board, which itself has tended to concentrate all trusteeship activities. It is further evidence of this tendency to find such cities, in the foregoing sample, giving to their top executive the title of "manager," perhaps in combination with other titles. The only exception is Louisville, which has carried forward the private-company designation of chief engineer and superintendent.

On the other hand, in mayor-council and city manager–council cities, the co-ordination level, in theory, should be the mayor or city manager, directly under the trusteeship level of the city council. Evidence of some tendency in this direction is found in use by such cities in the sample of the title superintendent or engineer, except Kansas City, which calls the water utility head a director.

Further proof is found in Table 1, contrasting the 1934 salaries of the top executive of the city and the top executive of the water utility. The six water-board and utility-district cities pay their top water-utility executive as much or more than the city as a whole pays the mayor or city manager. Where there is no water board or utility board, the water-utility head is brought into the executive pyramid, under the mayor or city manager as far as salary is concerned.

The question of the proper salary to pay the top executive of

the water utility has been much discussed. In many cities it is possible to show that the top executive of the predecessor private water utility, before purchase by the city, was paid as much as twice the salary now being paid by the city to its top water-utility executive. There is strong pressure against high executive pay for water-utility work. This is exerted by the mayor, the city council, and the heads of various city departments who argue with some justice that their work is also entitled to similar high com-

TABLE 1

COMPARISON OF SALARY OF CHIEF EXECUTIVE OF CITY AND CHIEF EXECUTIVE OF WATER UTILITY

City	Mayor, Except as Noted	Water-Utility Executive
New York	$40,000	$15,000
Cincinnati	23,000 (city manager)	7,500
Dallas	13,200 (city manager)	4,400
Baltimore	12,000	8,500.
Fort Worth	10,000 (city manager)	4,800
Pasadena	9,000 (city manager)	6,600
Sacramento	9,000 (city manager)	5,400
Washington	9,000 (commissioner)	5,800
Oklahoma City	8,000 (city manager)	4,000
El Paso	5,000.	3,850.
Los Angeles	10,000	18,000 (water board)
San Francisco	10,000	12,000 (utility commission)
Oakland	10,000 (city manager)	10,626 (utility district)
Denver	6,000	6,000 (water board)
Louisville	5,000	5,000 (water board)
Des Moines	4,500	5,000 (water board)

pensation. This is the "executive pyramid" point of view, classifying all pay up to the mayor or city manager. There is also very strong public pressure against high executive salaries. In the public mind, the predecessor water company was paying execessively for its executive services. To the public, the modest salaries of Table 1 look high.

The water-utility executive's case for substantially higher pay would be stronger if his duties more closely resembled those of the predecessor general manager or president of the private water utility. As has been pointed out, the application of the term "manager," even in cities with strong water boards and utility boards, does not make the top executive of the water utility a

"manager" in the private-business sense. He is clothed with a different kind of authority, which has been called here (with Urwick) the authority to co-ordinate. It may well be that this type of authority will customarily command a lower salary than is paid for the ability to command in the general management sense. The difference is in the degree of delegation of authority by the management committee. The board of directors of a private business will commonly delegate to their general manager the maximum possible authority, and exact from him maximum possible personal responsibility for success or failure. The board of trustees of a public business, on the other hand, tends to delegate the minimum personal authority and responsibility to their top executive. Everything, as far as possible, is determined on the basis of custom, law, regulation, or motion passed by the board to meet the specific case.

Another reason for relatively lower salary of the top executive as compared to private water utilities is the practice of promotion from within. Like other municipal undertakings, management is recruited either from within the organization or from within the city. The latter is little different from the former in producing executives of local experience, therefore of local earning power. The typical top executive of the water utility may be described as an engineer, usually with university training, with knowledge of the water utility that approaches perfection, with little or no background of outside experience. Even though his ability as an executive might justify much higher pay, he has no bargaining power.

It must not be forgotten that the top water-utility executive sometimes is in a favored position, from the standpoint of having life-employment under civil-service rules. He can and does place a high valuation on such guaranties, as compared to the relatively greater insecurity of executive employment in private business.

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utilities. By this is meant the practice of the city charter of defining in exact legal language certain functional duties to be performed by various officers of the city, such as the attorney, the auditor, the treasurer, the purchasing agent, the civil-service commission, and the water board. Often these functional assignments are overlapping and conflicting, as when a water board is told in its charter that it is responsible for management of the water utility; but, it is added, all purchases must be made through the city purchasing agent, all legal counsel must be obtained from the city attorney, and so forth. Legal functionalization has the following characteristic effects upon organization.

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There can be effective organization of departments and subdepartments within the water utility only through recognition of the requirements of legal functionalization in the particular case. This may well lead to overfunctionalization from the standpoint of efficiency, but it does mesh the organization in with the rest of the city government.

5. Legal functionalization which results in two agencies having joint responsibility, such as a water utility and the city treasurer both responsible for the water fund, leads to a "line of decisions" concerning questions arising from time to time of jurisdictional character. Since the solution of such problems must always be a decision giving one of the two agencies the right and duty of making the final decision in the particular case, the result of the line of decisions is to make one of the two agencies a mere rubber stamp. Thus, in the case of water utility and city treasurer, the water utility may rubber-stamp the treasurer's investment of water funds in sinking-fund reserves, or his deposit of funds in banks of his own choice. The city treasurer, on the other hand, may rubber-stamp the water board's expenditure of funds for construction, whose diversion from debt service will result in financial difficulties at a later date.

It should not be thought that "legal functionalization" is the only force making for multiplication of the number of departments and subdepartments within the water utility. An important motivation is derived from the system of classifications of pay, commensurate with rank. Since it is believed by most water-utility executives that they are underpaid, there is constant pressure to increase the number of subexecutives entitled to the highest rating for pay purposes under the chief executive. Functionalization of additional departments, split out of the older departments, is a convenient device. This is often true, for example, of the chief chemist, who is given the functional position of head of the laboratory department in order to place his rating for pay purposes at the highest possible level.

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1. Los Angeles, San Francisco, and East Bay water utilities use part of their system of dams, reservoirs, and canals for the generation of electricity.

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the water utility has been much discussed. In many cities it is possible to show that the top executive of the predecessor private water utility, before purchase by the city, was paid as much as twice the salary now being paid by the city to its top water-utility executive. There is strong pressure against high executive pay for water-utility work. This is exerted by the mayor, the city council, and the heads of various city departments who argue with some justice that their work is also entitled to similar high com-

TABLE 1

COMPARISON OF SALARY OF CHIEF EXECUTIVE OF CITY AND CHIEF EXECUTIVE OF WATER UTILITY

City	Mayor, Except as Noted	Water-Utility Executive
New York	$40,000	$15,000
Cincinnati	23,000 (city manager)	7,500
Dallas	13,200 (city manager)	4,400
Baltimore	12,000	8,500.
Fort Worth	10,000 (city manager)	4,800
Pasadena	9,000 (city manager)	6,600
Sacramento	9,000 (city manager)	5,400
Washington	9,000 (commissioner)	5,800
Oklahoma City	8,000 (city manager)	4,000
El Paso	5,000.	3,850.
Los Angeles	10,000	18,000 (water board)
San Francisco	10,000	12,000 (utility commission)
Oakland	10,000 (city manager)	10,626 (utility district)
Denver	6,000	6,000 (water board)
Louisville	5,000	5,000 (water board)
Des Moines	4,500	5,000 (water board)

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ate short-line railroads; Los Angeles and Denver maintain public highways; Denver operates irrigation canals; Dallas, Fort Worth, Oklahoma City, New Orleans, New York, and Los Angeles operate sewage disposal plants.

This list is not intended to be exhaustive, but merely to indicate the types of additional activities growing out of increasing size and spreading range of duties. It is a strong reason for the increase in the number of departments into which the work of the water utility is divided under the chief executive. This increase in departmentation, also largely of functional character, fits in with the basic legal functionalization already discussed. To increase the number of executives reporting to the chief executive, whether for legal functionalization or expansion reasons, increases the co-ordination problem and the co-ordination responsibility of the chief executive.

THE COMMITTEE OF EXECUTIVES AS A CO-ORDINATION DEVICE

Much can be said against the use of the management committee from the standpoint of its high cost of operation; its irregular contact with problems because of its intervals between meetings; its tendency to reverse itself. It is not the province of this study to analyze these defects in detail, but rather to deal with the basic fact that the typical water utility in the United States is controlled, at the trusteeship level, by a management committee. The problem is what to do about it, in order to develop effective management from top to bottom of the organization through the various levels of management activity.

The discussion to this point has brought out the importance of clear-cut lines of demarcation between the field of management activity of the trustees, or management committee, and the field of activity of the top executive, or co-ordinator. It has been urged that the ability to manage of the trustee committee is, in general, great, but that this ability to manage is confined to the trustee committee as a whole and operating as a group. Individual trustees cannot function as executives without confusion and the sense of interference. On the other hand, the top executive cannot be a general manager in the sense of ability to issue "line" instructions

and commands that must be followed, willy-nilly. The top executive is primarily a co-ordinator, deriving his power from his position as representative of the management committee, spending much of his time in co-ordinating management committee and organization.

The problem of successful conduct of meetings of the water board is one of the constant cares of the top executive. If meetings are not successfully conducted, the business of the water utility will be held up. The resulting confusion will add to the burden of the top executive and be charged to his neglect. The essentials for successful conduct of water-board meetings are a planned agenda; a system of presentation of water-utility problems to the water board in sufficient detail and in a manner to permit formation of judgment by the members; suggestions concerning the proper action of the water board on each problem; a legal record of the formal actions of the water board.

Evolution of board-meeting conduct in Denver has led to the device of the committee of executives, consisting of the top executive plus the six subexecutives who head the operating departments. The plan of procedure that has developed is as follows:

1. The committee of executives holds a lengthy session four or five days in advance of the regularly scheduled meeting of the water board. The purpose of this meeting is to prepare the agenda for the coming meeting of the board. This means that each executive in turn presents to the committee those problems he wishes to have passed on by the water board. Some of these problems never reach the board itself. The committee and the top executive are often able to solve the problem, especially if the question involves internal co-ordination between different subexecutives. The work of the committee, therefore, sorts out the problems of the current time period, solves those that can be solved without going higher, and thus produces an agenda less likely to be unnecessarily loaded with minor and inconsequential matters.

2. Each of the items proposed for the agenda, having been scrutinized and accepted for presentation, is then assigned to one or more of the committee members, and through them to their subordinates, for preparation of a written résumé of the problem,

recommendations for action, and justification. The length of such a written statement, of course, varies with the importance of the problem, the familiarity of the members of the water board with the problem (which may or may not have come up before), and the adequacy of available data concerning the problem.

3. Twenty-four hours before the scheduled meeting of the water board, each board member receives a folder containing a copy of the proposed agenda, plus copies of all the written statements that will be presented at the meeting. Experience has shown that the board members do go to the trouble of becoming familiar with the contents of this folder before the meeting. From their standpoint this procedure saves time, forces the executive to defend his position with facts presented in writing, and permits reflection by the board member before the meeting.

4. The board meeting takes up each item of the agenda, the membership of the executive committee being present to answer questions. In practice, the water board rarely takes time to reread the entire written statement. Instead, the time of the meeting is devoted to asking questions which lead either to action by the board, to dropping the matter as not requiring action, or to returning the problem for further study and subsequent report—often, in the latter case, in appointing a committee of the board to guide the next steps, or, through power to act, to make the necessary decision.

With two water-board meetings required by the charter each month, the cost of preparation for meetings, plus attendance at the meetings, plus the payment to the board members ($25.00 per meeting for five members) is not less than $1,000 per month. This may be said to be the extra cost of having a plural executive at the trusteeship level, as far as Denver is concerned. This, however, would be an overestimate, because much of the report-writing, conferring, and discussion would take place under any management plan. It is also true that this method of operation of board meetings has saved its cost many times over in reduction of confusion and improvement in ability of the water board to come to intelligent and economical conclusions. From the standpoint of the chief co-ordinating executive of the water utility, the com-

mittee of executives is an indispensable part of the machinery of co-ordination. Through it, and through its contacts with the water board, much co-ordination simply happens in natural fashion; more difficult problems are properly identified and can be segregated for more complete study and report to the water board; and the board is educated more completely concerning the problems of the water utility, thus lessening the chance of irresponsible decision on its part.

THE "LIMITS OF DISCRETION" OF THE CO-ORDINATOR EXECUTIVE

Every executive is free to operate within certain more or less accurately established limits of discretion. One of the earmarks of the co-ordinator type of top executive is that he must operate within carefully established and narrow limits of discretion. This is not only true of the top executive in the water utility, but of all subexecutives. The principal ways in which the limits of executive discretion are defined and narrowed for the top executive of the water utility are as follows:

1. Discretion is greatly limited by the laws, ordinances, and motions (actions of the state legislature, the city council or the water board) which affect the operation of the business. Among the field of business activity in which freedom of executive discretion is great in private business, but in which discretion has been limited by passage of detailed laws or ordinances in the case of the water utility, are pay of employees, employment and retention of employees, procedure of purchasing, procedure of selling junk or used equipment or unneeded property, procedure of making and enforcing the budget, procedure of depositing and paying out money.

2. It is a common practice in water-utility management to permit executive discretion to be exercised within certain limits by blanket authorization passed by the management committee. Thus, in Denver, the top executive was empowered to approve purchases of less than $1,000; was permitted to employ temporary workers on per-diem pay; was allowed to settle claims or approve refunds of less than $50; could authorize temporary transfers,

even of executives, and could grant "trial" promotions without increase in pay subject to final approval by the water board. He could not buy a new automobile for the water utility, even though its cost was less than $1,000; he could not employ executives without board approval, even on the per-diem plan for short periods of time; and employment of special consulting experts was of course the sole responsibility of the water board. Limitations such as these are far more sweeping than limits of discretion placed upon the private-business executive.

3. In addition to the real limitations of laws and actual voted limited authorizations, there is the great class of intangible, psychological limitations that exist only in the mind of the executive. The careful top executive of a water utility will take up many problems with the water board before they are decided, on the off-chance that some member or members of the board will have some decided objection to the proposal. This brings into the realm of actual limitation the whole field of engineering and construction. Thus, a change in fuel is clearly a matter for the water board to consider, because abandonment of coal in favor of electricity, for example, is sure to bring a protest to one or more members of the board from interested and influential dealers in coal. Similarly, an irate citizen is often permitted to appeal his case, no matter how positively the water board has ruled on similar cases, on the theory that the citizen will never be satisfied until he has had his "day in court" with the water board itself.

When one considers that metropolitan city water utilities are among the large businesses of their respective communities, the rigidity and narrowness of the limitations within which the top executive of the utility finds himself can be better appraised. The Denver water utility, for example, during recent years has had a working force of 450, a capital investment of over $30,000,000, a plant having fifteen major operating points scattered in a long line more than 100 miles up into the mountain watershed, and an annual income of $2,500,000. The work of top management of this moderately large business is a problem in co-ordination, achieving the necessary results by skilful use of the extremely narrow range of executive discretion.

The rigidity of this whole structure of governmental limitations upon executive discretion does not lend itself well to the handling of emergencies. To cope with this difficulty the Los Angeles water utility, along with other agencies of the city government, has been created a special emergency district to operate only in event of disastrous earthquake. The chief executive of the water utility, part of this earthquake organization, is thus empowered to cut through all red tape—to be the general-in-command for the period of the emergency. The authority includes the right to issue a limited sum of city warrants if no other means of obtaining the needed supplies is at hand.

The mistake of thinking that the narrow limits of discretion available to the co-ordinator–type executive proves that such an executive is weak and ineffective should not be made. To operate a water utility successfully under the typical municipal management committee of city council or water board requires thorough understanding of such matters as the exact limits of discretion, and, in a sense, requires more skill because of the very existence of such narrow limitations.

SUMMARY

In municipal water utilities the top level of management, under the management committee, is necessarily a co-ordination level because the general management type of activity is incompatible with a strong management committee of trusteeship type, and because the trustees cannot bridge the gap between themselves and the operation of the water utility in any personal manner. Water-utility executives, in practice, are better fitted by experience and training for the co-ordination type of executive activities than for general management.

A trend that emphasizes the need for co-ordination at the top management level is the increase in the number of subexecutives in the water utility, each in charge of a department. This trend has resulted partly because of legal functionalization requirements, written into the charter. It is partly the result also of the increase in scope of activities of the water utility and the desire to increase the number of subexecutives drawing maximum pay.

Proof of the great importance of effective co-ordination at the top management level is found in the success of the committee of executives as a co-ordinating device. Through such a committee, in addition to internal co-ordination, it has been possible to organize the work of the water board more effectively.

The authority of the top executive or co-ordinator in the water utility is circumscribed. Limits of discretion of the top executive have been established by means of laws, ordinances, and specific motions; and also by means of narrow limits of permissible discretion incorporated in blanket authorizations. In addition there exist many and important psychological limitations in the mind of the executive. Even the degree of freedom to cope with emergency is sometimes laid out by statute beforehand. This clothes the top executive of the water utility with a different type of authority from either line or functional—a type that may well be called "co-ordination authority."

[*To be continued*]

BOOK REVIEWS

British International Gold Movements and Banking Policy, 1881–1913. By W. EDWARDS BEACH. ("Harvard Economic Studies," No. 48.) Cambridge: Harvard University Press, 1935. Pp. xiv+218. $2.50.

The period selected for study by Professor Beach is perhaps the best for any analysis of what is coming to be called the "old-fashioned" gold standard. By 1880 most of the leading powers of the world had adopted that standard *de facto* or *de jure*, and there was no reversion to paper standards prior to 1913. During half the period the world was faced with a shortage of monetary gold; during the other half it was confronted with the steadily-increasing supplies of the South African mines. Finally, London enjoyed an undisputed pre-eminence as a money market, and throughout the period the Bank of England operated on such slender reserves that its policy was very sensitive indeed to gold movements.

Following upon the suggestion of the late Professor Allyn A. Young, the author has attempted to find out the significant causes of international gold movements to and from London—a problem of much complexity, as Mr. Keynes and others have pointed out. To take only the extreme contrasts of theory, we have, on the one side, the classical doctrine that gold moves internationally only from countries where commodity prices are high to those where they are low, the amount and duration of the flow being determined by the terms of trade and the balance of international indebtedness. On the other side are the theorists who regard gold movements as due primarily to changes in the rate of interest on short- and long-term funds.

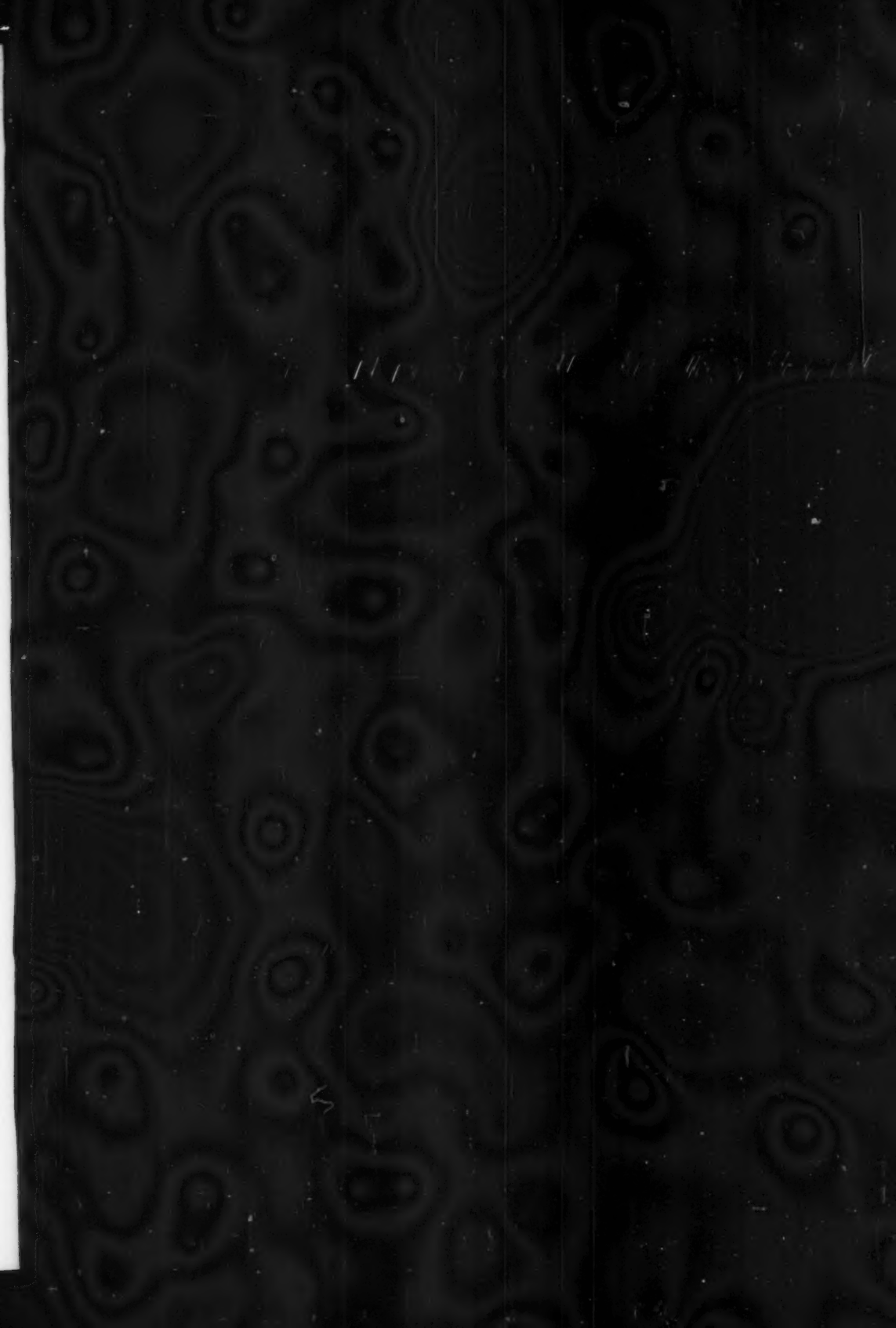
Wicksell has attempted a theoretical correlation of these divergent viewpoints, but Professor Beach's approach is strictly practical and statistical. He sets out first of all to collect and reproduce all of the relevant statistical data regarding the London money market and the British banking system, and then presents three chapters in which these data are combined with the study of contemporary literature to present a reasonably complete historical survey of the period under consideration—a survey which, incidentally, presents in convenient form a very useful picture of the changing position of the Bank of England in regard to the money market as a whole.

This analysis develops a situation very similar to that shown to exist in the United States by Professor Young (which excludes the possibility of significant differences between the gold movements of debtor and creditor countries). "In general, gold imports became important during the later stages of periods of business expansion, and at the same time the volume of currency in the hands of the public was expanding. In recession the flows were reversed. Thus the Bank of England acted as a channel through which gold passed from foreign countries or the mines to the British public" (p. 77). While it is true that the classical theory of gold movements may never have been intended to apply to periods as short as the typical business cycle, it is certain that it cannot be used to explain the situation described above without unwarranted assumptions regarding the relative "stickiness" of price levels in the several countries concerned. Professor Beach therefore concludes, after examining several hypotheses, that "movements of foreign balances may dominate the situation over periods so short as the various phases of the business cycle" (p. 180), and that changes in the discount rate of the Bank of England were primarily responsible for the movement of such balances into and out of London.

In so far as this study is concerned specifically with cyclical gold flows during the period considered, the conclusion is warranted by the data presented. This is a substantial contribution, but it still leaves much to be done in studying the organic relationship of interest rates to gold movements. The author is to be congratulated, however, on his able handling of statistical data and business annals, and on his ability to present a satisfactory picture of a situation where both sources suffer from serious lacunae. The book also contains a very useful Appendix dealing with the relationship between gold movements and business cycles in the United States from 1896 to 1913, and an excellent working Bibliography.

F. Cyril James

University of Pennsylvania



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Volume X OCTOBER 1937 Number 4

This issue consists of two parts. Part I

Possibilities and Limitations of Investors' Services
Delbert Harlow Kerchner

A Review of Money Rates in Chicago *Don M. Dailey*

Price Movements of Newly Listed Common Stocks
G. Maxwell Ule

Municipal Water-Utility Management—*Cont.*
E. Grosvenor Plowman

(*For full Contents see inside page*)

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THE JOURNAL OF BUSINESS
of the University of Chicago

Vol. X CONTENTS *for* OCTOBER 1937 No. 4

INDEX TO VOLUME X iii

POSSIBILITIES AND LIMITATIONS OF INVESTORS' SERVICES 299
DELBERT HARLOW KERCHNER

A REVIEW OF MONEY RATES IN CHICAGO 322
DON M. DAILEY

PRICE MOVEMENTS OF NEWLY LISTED COMMON STOCKS 346
G. MAXWELL ULE

MUNICIPAL WATER-UTILITY MANAGEMENT—(*Cont.*) 370
E. GROSVENOR PLOWMAN

BOOK REVIEWS

W. Edwards Beach, *British International Gold Movements and Banking Policy, 1881–1913*
F. CYRIL JAMES 389

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